

The Commercial Car Journal

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S. A. E. COMMITTEE CHAIRMEN AND MEMBERS APPOINTED FOR 1916

At the Council of the Society of Automobile Engineers in Chicago, on January 28th, A. Ludlow Clayden was appointed Chairman of the Standards Committee. This is a most important position as the standards work of the Society is more or less dependent upon the activity of the chairman. The members of the other committees were named as follows: Membership Committee, R. H. Coombs, chairman; Orrel A. Parker, N. B. Pope, W. G. Wall and J. J. Jennings. Publication Committee: Herbert Chase, chairman; W. R. Strickland, E. S. Foljambe, Daniel Roesch and C. T. Meyers. Meetings Committee: G. W. Dunham, chairman; H. G. McComb, W. H. Conant, David Beecroft and W. A. Brush. Finance Committee: H. M. Swetland, chairman; David Ferguson, Jos. Bijur, Christian Girl and H. W. Aldan.

EXPORT FIGURES FOR 1915 FOR COMPLETE CARS

During October, 1915, 5075 passenger and commercial automobiles, valued at \$7,056,445, were exported as against 1404, valued at \$2,965,351, in the corresponding months of 1914. For the ten months ending with October, 1915, 18,865 commercial cars, valued at \$52,076,406, and 34,515 passenger cars, valued at \$29,543,227, were exported making a total of 52,380, valued at \$81,619,633, as against 21,571, valued at \$21,241,860 for the same period of 1914. Germany received no cars from the United States during last October, while the United Kingdom got 2021, valued at \$2,730,468. Other European countries received 814, valued at \$1,920,176.

MALLEABLE IRON PLANT MAY BE BUILT BY TIMKEN

It is understood that the Timken Detroit Axle Co. will build a large malleable iron plant employing about 500 men. Business of the company has been increased to such an extent that it has experienced considerable difficulty in getting prompt shipments of raw material, especially on the enormous amount of malleable castings its company uses. The new plant will take care of about one-half of the company's present requirement for malleables.

E. V. A. NEW YORK MEETING

At the recent meeting of the Electric Vehicle Association of America, in New York City, on January 25th, Mr. Day Baker, manager of the Agencies of the General Vehicle Co., of Long Island City, gave a talk on the sales problems connected with marketing electric vehicles and exhibited a number of slides.

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PACKARD BUYS LAND FOR AEROPLANE FIELD

The Packard Motor Car Co., Detroit, has acquired a large tract of land near Mt. Clemens, Mich., which will be used as an aviation field and a landing place for aeroplane tourists. Aeroplanes will shortly be received and experiments commenced. The field will be made available for the comfort and convenience of aero tourists and probably will be equipped with hangars, repair shops and supply stations. The Packard Co. is strongly interested in aviation affairs and tests with a view of bringing out the value of the 12-cylinder engine for aeroplane use have been in progress for several months. Experimental aeroplane will be fitted with engines designed and constructed at the Packard factory. The company does not contemplate the manufacture of complete aeroplanes for the time being at least, but will concentrate upon perfecting engines for aeroplane use.

ELECTRICS ARE ON THE INCREASE IN ENGLAND

The use of electrics has increased in England during the last year, the number having increased from one hundred and fifty a year ago to six hundred and sixty to-day. The war has been responsible to a great extent for the use of the electric. A great majority of the drivers now in England are women, and the electric is more simple to handle than the gasoline car; and then a great many of the gasoline trucks have been commandeered so that many firms had to resort to the electric.

METROPOLITAN SECTION S. A. E. MEETING FEBRUARY TWENTY-FOURTH

The Metropolitan Section of the S.A.E. will hold the last meeting of the fiscal year, February 24th, at the Automobile Club of America, 247 W. 54th Street, New York City, at 8.15 P. M. The program of the evening contains a number of important announcements affecting the welfare of the Section, and election of officers. The paper, by Peter P. Dean, M.A., I.E.E., entitled, "Late Developments in Engine and Chassis Testing," will be illustrated by an excellent collection of lantern slides.

FIRST MOTOR TRUCK SHOW FOR SAN FRANCISCO

The first motor truck show to be held in San Francisco opened on January 25th in the large Palace ballroom, space being taken for practically every truck being sold on the Pacific coast. The new Doane truck was among the exhibits, as were the Golden West Quad, Moreland Distillate, Moore, Denby, GMC, Reo, Dart, Metz, White, Hewitt-Ludlow and others.

MAY BE DUTY ON AMERICAN TRUCKS AFTER THE WAR

By T. M. JONES

While the British duty on private cars imported into the United Kingdom was ostensibly put on for the duration of the war, there are many in the motor trade in that country who think that it will be continued after the war. In that case, once the principle is accepted, the duty will almost certainly be extended to commercial cars; indeed, there are some in the British motor trade who think that the British duty on commercial cars will come before the end of the war. Already, with one exception, 25 per cent. of the output of British commercial car factories has been released by the military authorities. The supply shows signs of having caught up to the tremendous demand set up by unpreparedness for war, and before long British manufacturers will probably have 50 per cent. of their output released. It is true that much of the present released output is confined to customers who are carrying on urgent Government work and want transport in connection with that work, but before long we shall be seeing commercial cars supplied much the same as ever to ordinary members of the buying public. Then perhaps we shall see a protective duty on commercial cars, though the writer believes that the enormously high cost of sea freightage will give to the British industry all the advantage that it requires in competition.

SIGNAL MOTOR TRUCK COMPANY REORGANIZED

Signal Motor Truck Co. of Michigan, Detroit, has been taken over by the Signal Motor Truck Co. of Maine and the capital stock increased to \$450,000. The factory operation and business will be continued in Detroit.

The capital stock will consist of \$150,000 of 7 per cent. cumulative preferred and \$300,000 of common stock. For protection of preferred stockholders it is provided that no dividends shall be paid on common stock that will reduce net current assets to an amount 125 per cent. less than the amount of preferred stock outstanding, and that for each dividend paid on common stock an equal amount of cash shall be appropriated to a reserve for retirement of the preferred stock.

The entire issue of preferred stock is reported to have been purchased by a Chi-

cago banking house. The common stock is to be placed in a five-year voting trust to assist the management and the carrying out of its plans for the future.

The officers are: Alfrd C. Burch, president; R. M. Murray Wendall, treasurer, and John Squires, secretary. The business of the company has increased 500 per cent. during the last year and the earnings increased 100 per cent. The output is to be trebled this year.

STANDARD ROLLER BEARING CONSIDERS REFINANCING PLANS

Stockholders and creditors of the company are considering a plan for refinancing the company by which it is proposed to make an assessment of \$730,713 on stockholders and to reduce the debt and capital from \$5,799,835 to \$3,891,758, with further provisions that the holders of notes and other payable accounts are offered the alternative of 60 per cent. of their claims in cash as payment of debts in full or 80 per cent. in the shape of redeemable income certificates covering a period of 20 years. The assessment will be made on the basis of \$15 per share on the 1st preferred in return for which the stockholders will receive 7 per cent. new preferred and 50 per cent. of the present holdings in new common stock. Second preferred will be assessed \$7.50 per share in return for which new preferred will be paid in addition to 25 per cent. of holdings in common stock. The assessment also includes stockholders of common stock who will receive 20 per cent. of their holdings in common stock.

JERSEY TO REGISTER TRUCKS ACCORDING TO CARRYING CAPACITY

In his annual report, W. L. Dill, commissioner of motor vehicles of New Jersey, recommends that the registration of commercial cars be based upon their carrying capacity and that the registrations be in such form as not to permit their use for other purposes than that for which they were especially designed. This recommendation is proposed to eliminate the use of trucks during the summer months for the transportation of picnickers, which often results in much damage to the roads by the throwing of glass and other objectionable matter on the roadside.

New Incorporations

Field Motor Co., Grand Rapids, Mich., capitalized at \$100,000, has been formed for the purpose of manufacturing a kerosene engine.

Malcom Motor Car Co., Dover, Del., capitalized at \$1,000,000, has been formed to manufacture automobiles and trucks by F. D. Buck, G. G. Dillman and M. L. Hertz.

Hascall Motor Truck Co., Painesville, Ohio, has incorporated with a capitalization of \$100,000 for the purpose of manufacturing motor vehicles, with I. Amster, E. M. Denner, L. S. Lommasson, J. C. Barkely, and John Dempsey, as incorporators.

Thomas Auto Truck Co., Inc., Manhattan, N. Y., has been formed to manufacture, buy and sell automobiles of all kinds. Capital, \$250,000. Incorporators: A. Cutter, 513 Park Ave.; C. L. Gonnett, 1366 E. 18th Street, Brooklyn, and A. Brandt, 1043 Valle Street, Bronx.

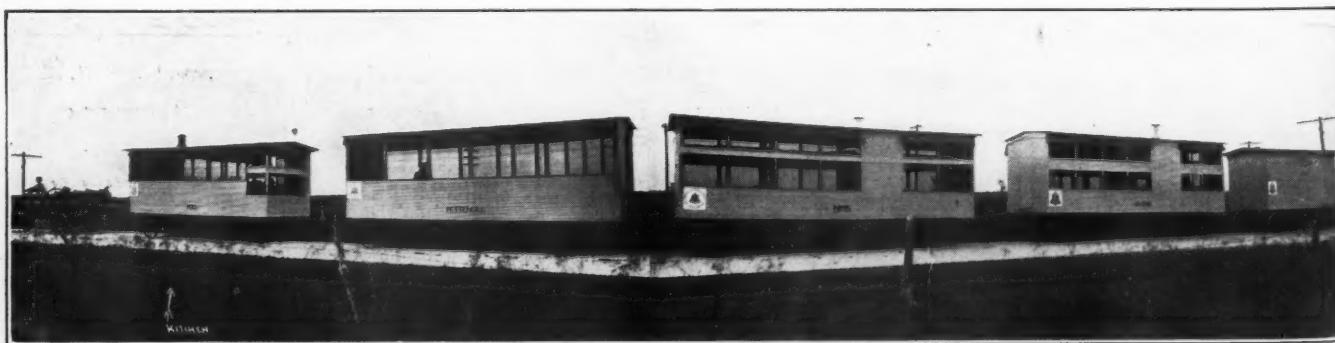
Page Bros. Buggy Co., Marshall, Mich., is forming a new company capitalized at \$100,000 to manufacture a front drive truck designed by E. H. Oversmith. It will be assembled at the Page plant and a selling organization will be formed in Detroit to dispose of the product.

Wolverine Detroit Tractor Co., Detroit, Mich., has been formed to manufacture a motor tractor to sell at from \$800 to \$900. The promoters are: W. G. Wagenhals, designer of the tractor, and formerly vice-president of the Wagenhals Motor Co., and W. J. McNamara. Temporary offices have been opened at 664 Grand Ave.

B. F. Goodrich Co., Akron, Ohio, reports gross sales amounting to \$55,000,000 in 1915. During 1914 total sales amounted to \$41,764,000 and there was \$4,450,427 net for dividends after heavy write-offs.

Republic Rubber Co. held its 15th annual meeting in Youngstown, Ohio, on January 24th, when the management reported that the tire business has increased 69 per cent. in 1915 over the previous year. The officers were re-elected as follows: Thomas L. Robinson, president; L. T. Petersen, and J. H. Kelly, vice-presidents; C. F. Garrison, secretary, and M. I. Arms, treasurer.

Four-Wheel Drive Automobile Co., Clintonville, Wis., has increased its capital stock from \$250,000 to \$500,000. A stock dividend of 100 per cent. and a cash dividend of 30 per cent. have been declared. The officers and directors were re-elected as follows: W. A. Olen, president; John Kalmes, vice-president; David Rohrer, treasurer; Frank Gause, secretary, and W. A. Holt, A. W. Priest and J. Kalmes.



Novel Automobile Train Used by Telephone Company in Texas

A new and most unusual use for the motor truck is here shown by the Southwestern Telegraph and Telephone Company, of Houston, Texas. They use a train of cars almost like that of a Pullman, consisting of a kitchen, dining car, two sleeping cars and a provision car. These are hauled by a two-ton Wichita truck. The sleepers are screened in and the men live comfortably in them while the work of setting up new lines proceeds. The entire outfit keeps pace with the work and the men live on the job.

The CCJ has most advertisers because it gives them biggest returns

THE COMMERCIAL CAR JOURNAL

Personal Items

Richard S. Bryant, factory manager of the Standard Welding Co., Cleveland, Ohio, died in New York on January 24.

W. R. Newlin has become sales manager of the Pierce-Arrow Motor Car Co., Buffalo, N. Y., succeeding Elmer Pratt, resigned.

Roy Stannard Drake, editor of Automobile Topics, died of pneumonia at his home in New York City on January 29th, in his 36th year.

D. C. McKay has been appointed special factory representative of the Edward A. Cassidy Co., Inc. He will have headquarters in Detroit.

Charles A. Durie, who has formerly been in charge of the final assembly of the Chase Co., Syracuse, N. Y., has become production manager.

J. L. Wood, formerly superintendent of the Eureka Electrical Mfg. Co., North East, Pa., has become director of service for the Remy Electric Co., Anderson, Ind.

George W. Cushing has become advertising manager of the Federal Motor Truck Co., Detroit. He was formerly editor and business manager of "The Detroiter."

E. M. Elliott, who recently resigned from the United Motor Truck Co., has been appointed general manager of the Premier Mais Motor Truck Co., Indianapolis, Ind.

D. F. Poyer, 1007 Ogden Ave., Menominee, Mich., has severed his connection and withdrawn his interests from the D. F. Poyer Co., manufacturer of the Menominee truck.

W. O. Rutherford, connected with the Goodrich Co., for the past 17 years, has become general sales manager, relieving H. E. Raymond, 2d vice-president, of many duties.

Roscoe C. Hoffman, engineer and designer for the Sun Motor Car Co., Elkhart, Ind., has resigned to devote his entire time to developing a Semi-Diesel type of tractor engine.

C. F. Conn, well known throughout the automobile accessory trade in northern and central New York, has become associated with Edward A. Cassidy, Inc., New York City.

G. M. Montgomery, formerly connected with the Bessemer Motor Truck Co., Grove City, Pa., has become New England representative for the Standard Motor Truck Co., Detroit.

William E. McCulla, assistant chief engineer of the Knox Motors Co., has resigned and returned to the Packard Motor Co., in charge of the research work of the aviation department.

George M. Davis, formerly manager of the Internal Gear Drive Association, Detroit, has become general sales and advertising manager of the Stewart Motor Car Corp., Buffalo, New York.

E. G. Gunn, of the Northway Motor & Mfg. Co., has been appointed chief engineer of the Premier Motor Corp., Indianapolis, and C. S. Crawford, formerly chief engineer of the Cole Motor Car Co., will assist him.

Thos. F. McCrickett, chief engineer of the Russel Wheel & Foundry Co., and formerly president of the Detroit Engineering Society, and a member of the American Society of Civil Engineers, died on January 26th.

Thomas B. Jeffrey Co., Kenosha, Wis., announces that from now on the pleasure car sales will be in charge of E. G. Soward, as sales manager, and W. B. Riley, as assistant sales manager. The truck sales department will be in charge of H. C. Hart, and the foreign department will be in charge of J. A. Rose. These men have been connected with the company for a number of years.

J. L. Glazier, Pacific coast representative of the Federal Motor Truck Co., of Detroit, has made arrangements to represent the Wichita Falls Motor Co., Wichita Falls, Tex. He will have his headquarters in Portland, Ore.

F. W. Sherwood has been appointed branch manager of the New York sales and service departments of the Gibney Tire & Rubber Co., with headquarters at Broadway and Fifty-seventh Streets, New York City.

F. J. Pardee, has been appointed sales manager of the Diamond Motor Truck Co. of Chicago. This company has made a material increase in the production facilities, and will turn out in the neighborhood of a thousand cars this season.



A. B. HANSON, Gen. Mgr. Service Motor Truck Co.

Mr. Hanson, who is well known in the industry, recently became general manager of the Service Motor Truck Company, of Wabash, Ind. He was formerly manager of the Service Department of the Chalmers Motor Company, of Detroit, Mich., and prior to that was engaged in the retail automobile business in Toledo.

Harry A. Bonelli, for some years connected with R. F. Taylor Corp., Garford truck distributor for New England, with headquarters at Boston, has resigned to accept a similar position with the General Vehicle Co., in the same city.

John A. Hill, president and organizer of the Hill Publishing Co., and the McGraw-Hill Book Co., died suddenly at the age of 57 from heart disease on January 24 while traveling in his automobile from his home in East Orange, N. J., to his office.

D. B. Harrington, formerly connected with the commercial car department of the Studebaker Corp., New York City, has joined the New York branch of the Chase Motor Truck Co., and will assist Mr. James A. Inness in the outside territory, acting as district representative.

Paul Sutcliffe, who has been in the advertising department of the Edison Storage Battery Co., Orange, N. J., has been made advertising manager. He joined the Edison interests in 1912, but resigned at the end of the year to become secretary of the W. S. Hill Advertising Co., Pittsburgh, Pa.

Studebaker Corp. has promoted three men to higher positions: W. S. Williams, formerly manager of the Dallas, Tex. branch, has become manager of the Kansas City branch and is succeeded by L. B. Alford. Mr. Alford was assistant branch manager of the Dallas branch for several years. W. D. Lacey has been advanced from wholesale salesman to assistant branch manager in Dallas, succeeding Mr. Alford.

Factory News and Changes

Wright Garage Co., Moline, Ill., is manufacturing commercial bodies for Fords.

Columbia Truck & Trailer Co., Pontiac, Mich., is erecting addition, 60x250 ft.

Brockway Motor Truck Co., Cortland, N. Y., will erect 2-story plant, 40x186 ft.

Standard Motor Truck Co., Detroit, is erecting three-story addition which will provide 60,000 sq. ft. of floor space.

Bimel Spoke & Auto Wheel Co., Portland, Ind., will spend \$25,000 in making new additions to its shops and not \$2500 as mentioned in our last issue.

Dorris Motor Car Co., St. Louis, Mo., has reduced the price of its I. A. W. 2-ton worm-drive truck chassis from \$2500 to \$1900. An extra charge for the governor and driver's seat will be made.

Turner & Moore Mfg. Co., Detroit, manufacturer of large parts for automobiles, is erecting factory structure, 75x300 ft. on Addison Street, which will give space for six times the present production.

J. C. Wilson Co., Detroit, has increased its capital stock from \$20,000 to \$225,000, and is about to embark upon the manufacture of motor trucks on a large scale. Vincent Link is designing a 2-ton model for the company.

The Smith Form-a-Truck Co. is erecting factory at Sixty-third Street and Fifty-sixth Avenue, Seattle, Wash., at cost of \$100,000. The plant at 411 North Clermont Avenue, will not be abandoned until production has started at the new plant.

Brasie Motor Truck Co., St. Paul, Minn., manufacturer of the Brasie Packet and the Twin City commercial cars, has been taken over by the newly formed Packet Motor Truck Co. H. H. Ormee is president, W. F. Tobin secretary-treasurer and G. M. Davis vice-president.

Auto Parts Mfg. Co., 528-32 Broadway, Milwaukee, Wis., has been reorganized and new capital introduced. Walter N. Schwab has become general manager, Charles W. Beckler, sales and advertising manager, and Frank B. Sykes, factory manager. The factory is being enlarged.

Ziegler Mfg. Co., Alexandria, Ind., with sales office at 910 Merchants Bank Bldg., Indianapolis, has started its operations. The plant of the American Wheel Works at Alexandria has been taken over and steel stampings and machine products will be manufactured for the automobile and machinery trades.

Hudson Co., Philadelphia, has opened a salesroom and service station at 1718 Indiana Avenue, Chicago, Ill. Howard R. Bruah is in charge. The parent company in Philadelphia has moved to the first floor of the Metropolitan Bldg., corner Broad and Wallace Streets, which contains 40,000 sq. ft. of floor space and is one of the finest buildings on Automobile Row. The space will be occupied as a business office, show room, service station and assembly department.

Imperial Brass Mfg. Co., Chicago, Ill., has announced that owing to the advances in cost of metal, it has become necessary to withdraw all quotations, prices and discounts. As soon as the raw material market becomes stable, it will announce new prices on its regular product, and in the meantime orders will be executed at the very best prices current when such orders are received. It also warns its patrons against undue delay in arranging for requirements for the next six months, as local and mill stocks in standard sizes of brass, copper and steel cannot be relied upon for quick delivery.

BONUS SYSTEM FOR DRIVERS

To the Editor:

We would like to inquire if you have any data which you could give us in regard to bonus to be paid to chauffeurs.

We have six drivers and have in mind to establish a bonus system whereby we can offer prizes for a certain period for upkeep, operation, cleanliness, etc., of the truck. We presume it should be established on a marking basis, so that each different item will count a certain number of points.

We would be glad to have you outline any proposition that you have known about that has ever been tried.

Brown-Wales Company.

Boston, Mass.

We have published, from time to time, in the body of other articles, matter pertaining to bonus systems for drivers, and we have had editorials on it.

A method which is employed by a well-known paint company of this city, is probably about what you want. It is as follows: The drivers are paid \$15 per week, but a bonus of \$30 is given to the winning driver on December 15th and of \$20 to the driver who comes second. Ten items are taken into consideration in figuring up the winners, namely:

Days in service.

Operating cost per mile.

Consumption of gasoline and oil per mile.

Tire expenses.

Machinery repair expense.

Body repairs.

Appearance of engine and body.

General conduct.

This is done by a committee not known to the drivers.

Another form of bonus system is as follows: \$14 a week is the lowest paid man, \$16 the next, and \$18 the next. This basis for these various salaries is according to the cost of operation of the truck handled by the different drivers; for instance, if the various costs of operation are kept below a certain figure for a period of three months, the driver is then raised from the \$14 basis to the \$16; if on the \$16 basis, he keeps the truck below a certain figure, he again is raised to \$18. On the \$18 basis he is required to keep the cost below a certain set figure indefinitely. If at any time, the cost runs over, he again drops back to the \$14 basis, and has to work up. The minimum amount of up-keep is determined by records of the trucks over a year or more.

—EDITOR.

INSPECTION OF GOODS AT DEPOT

[501] I write to ask you if it is considered safe among automobile manufacturers, to ship on order B. of L. allow inspection. I have just had a peculiar case of shipping in this way, draft attached to order B. of L. marked allow inspection. Shipment was made to Gassaway, W. Va., party inspected the machine in the depot, evidently found the same satisfactory, as he paid his draft and accepted the shipment. Several days afterward he became dissatisfied and sued out attachment on the money which was still lying in the Gassaway Bank and shipped the machine back to me on straight B. of L.

My local bank tells me, that they cannot take any proceedings because of the fact that the Gassaway Bank may have been dilatory in making return of the funds. I placed my claim in the hands of the R. G. Dun & Co., Collection Department, who have defended it before a Justice Court. I being a non-resident, of course, lost.

I have appealed the case to Circuit Court. I would appreciate it very much, if you would advise us if you have heard of any manufacturers having similar cases.

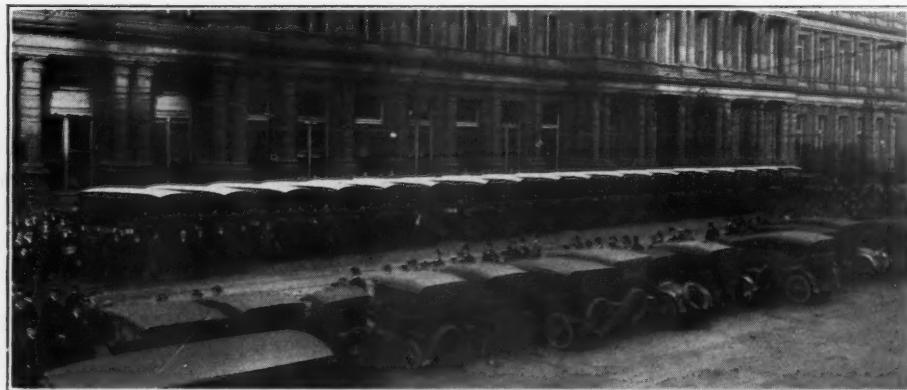
Herman Manufacturing Co.

Washington, D. C.

Generally the consignee in a case like this would be concluded by his inspection at the station and if the machine was paid for, he could not afterward recover the money for any defect which he could have discovered by that inspection. If however—and this is one of the points of this case—there was a *latent* defect in the machine which he could not discover by simple inspection, he could, when that latent defect later revealed itself, reject the machine and demand to have the price refunded to him. Whether the cause of your customer's rejection was a latent defect or one that he could have discovered by the inspection, I of course do not know. If the latter, my judgment is that he would have no right to attach the price in the hands of the bank.

If he rejected it on account of latent defect, provided the latent defect was something for which a manufacturer was responsible, then he had a right to attach the price in the hands of the bank provided the bank still had the funds in its possession. It seems to me that I would do business with a bank that handled its business with a fair degree of promptness.

E. J. B.



Eighteen Autocars That Will Carry Mail in Cincinnati

The mail service of Cincinnati has recently been motorized to the extent of eighteen Autocars, which are operated by a private concern that was awarded the contract at \$40,188.98 per year. The amount was figured out on a mileage basis. The installation displaces forty-five horses and twenty-five wagons. A. F. Hehman is in charge of the fleet.

The CCJ brings greatest returns to advertisers because of largest circulation among quantity buyers

New Truck Agencies

Oklahoma Motor Sales Co., Oklahoma City, Okla., has taken the agency for the Jeffery trucks.

Marquardt-Genz Garage Co., Milwaukee, Wis., has taken the agency for the Diamond T trucks.

Glazier, Al. leased quarters in garage of Graham Motor Co., Portland, Ore., for motor truck salesroom.

Commercial Motor Sales Co., 411 W. Spring Street, Columbus, Ohio, has taken the agency for the Commerce truck.

Republic Motor Truck Co., 910 Race Street, Cincinnati, Ohio, moved to larger quarters at McMicken Street, head of Race.

W. W. Williams, Brunson Bldg., Columbus, Ohio, has taken the central Ohio agency for the Sterling and Sternberg line of trucks.

Atlas-Detroit Motor Car Co., Detroit, capitalized at \$250,000, has been organized for the purpose of manufacturing pleasure and commercial cars.

United States Mail Contracting Corp., Toledo, Ohio, large user of motor trucks, has taken the distributing agency in northwestern Ohio for the Kelly-Springfield trucks.

Continental Motor Truck Co., Chicago, has opened an export office at 17 Battery Place, New York City, in order to care for its increased export business, and the interest of its foreign distributors and agents.

Koehler, S. G. Co., H. J., announces the following new 1-ton Koehler truck agencies: Covell's Garage, Canisteo, N. Y.; William S. Bowlby, Clinton, N. J.; Reo Springfield Co., Springfield, Mass.; Walter C. Gilbert, Derby, Conn.

Moffitt's Sons, B. O., 28-30 Collier Street, Binghamton, N. Y., have secured site and will erect garage, 70x160 ft. for handling and caring for motor trucks exclusively. Republic trucks are handled and they wish to take on tractors and trailers, etc.

Stewart-Warner Speedometer Corp., Chicago, for the fiscal year ending December 31, is stated to have earned \$2,054,000. This figure is stated to be net, after the deduction of all depreciation allowances and will result in a surplus of \$1,350,000 after the payment of dividends. The company made \$982,000 in 1914.

Pittsburgh Federal Truck Sales Co., 6117-19 Broad Street, E. E. Pittsburgh, Pa., is building new garage and service station containing 9000 sq. ft. of floor space. Complete parts of Federal and Vulcan trucks are carried, and repairs made on all trucks. A general hauling business is also done. J. W. Lawrence is president; D. O. Jones, secretary-treasurer, and W. M. Burnett, sales manager and traffic expert.

Rasmussen & Co., L. F., 2419-21 S. Park Ave., Chicago, has taken the Chase line in the Chicago territory. The Chase was formerly handled in that territory by the Chase Motor Truck Sales Co., a direct factory branch. L. F. Stevens, who has been acting as Chicago manager, will remain with the Chase organization as division sales manager with headquarters in Chicago, and covering the Middle West.

Vim Motor Truck Co., Philadelphia, Pa., has placed its export account with Gaston, Williams & Wigmore Co., 140 Broadway, New York City. Through this connection, Vim cars are now being shipped to Archangel, Madrid, Petrograd, Rome, Paris, Capetown, London and Havanna. Not a single order for war purposes has been accepted. All the shipments made so far to foreign countries have been for business exclusively.

Dealers Form National Organization

Reorganization of the Associated Garages of America Results in National Retail Automobile Trade Association, Embracing Dealers, Garage and Accessory Men

 THE meetings of the Associated Garages of America at the Congress Hotel, Chicago, during the Chicago Show, were virtually a reorganization of this national body, which, although known as the Associated Garages of America, in reality embraces the dealers, the garagemen and those selling accessories. After considerable discussion and much heated argument on the part of the garagemen,—who felt that the word "garage" should not be eliminated from the name—the new title of the organization was finally decided upon. This, as should be, is sufficiently broad to embrace all of the varied interests the organization represents, yet without including in the name any reference to any particular branch, all being included under automobile retail association.

New Officers

The president, Robert Bland, of Evanston, Ill., continues over for this year, having been elected for a two-year period. The new secretary is Robert A. Wilson, 208 S. LaSalle St., Chicago; Treasurer, F. A. Bean, Detroit.

Fifteen-Year Term for the Secretary

Plans have been under way for some time to make the organization more effective, more national in its scope and particularly to organize the sections, so-called, in the various States. After a long discussion by the Board of Directors, it was finally decided to contract with Robert A. Wilson for a 15-year period, as secretary or practically a general manager.

Mr. Wilson is to receive 75 per cent. of the annual dues of the Association as his remuneration, is to maintain an office in Chicago, and hire the necessary help at his own expense. The terms of the agreement are such that the contract can be terminated by the Directors, under certain stated conditions.

Mr. Wilson, it is understood, assumes at the present time the financial responsibility of the few debts which are outstanding, for which he will be reimbursed by the organization as soon as the dues and other income have been collected. This is an unusual arrangement, but one, it is believed by the Directors, that will result in a general building up of the State organizations, and thereby a large increase in membership to the national organization. A membership in the neighborhood of 50,000 is looked forward to as the goal to be reached by the end of 1916.

Directors

The following directors were also elected: Walter B. Taylor, or Rockford, Ill., the retiring president of the Garage Owners' Association of Ill.; Jacob Friedman, Dyersville, Ia., president of the Iowa Retail

Automobile Dealers' Association; L. C. Steers, of Detroit, Secretary of Garage Owners' Association of Mich.; E. T. Jones, Akron, Ohio, Secretary Akron Automobile Dealers' Association, and Carl R. Vaught, of Indianapolis, President Indianapolis Garage Owners' Association.

resolution was passed at their New York meeting. The discussion brought out the fact that the garagemen believe that the dealer should pay the freight from the factory to his place of business and that the jobbers' resolution applied to shipments from the jobbers' place to the dealer, so one of the differences was cleared up at once. The status of the dealer was also defined.

The general sentiment was expressed that garages in general should be more cleanly and be run on more businesslike lines, that there should be more co-operation between the jobbers and garagemen and dealers.

There was considerable discussion concerning a publication known as the "American Garage," published in Chicago, as the official publication of the American Association of Garage Owners, and this paper was censured in a resolution introduced by H. E. Halburt. He stated, that this publication linked its subscription with that of membership in the American Association of Garage Owners. He thought that these matters should not be mixed, and also said that investigation had shown that men whose names were said to be connected with the above mentioned association did not give their consent to this, or were not members of said association, and that advertisements were also reproduced, which these men claim they had never contracted for. Mr. Halburt's resolution was passed.

Question of Retail Price of Cars in Various Localities

The subject of who should pay the freight and the price which should be advertised in various sections as the price of the car, also received considerable attention. It was agreed that it would not be feasible to advertise the price of the car in any section as the maker's price plus the freight, unless at the same time the maker's price was also mentioned. This method of advertising has been successfully carried on by several of the members. The result of the discussion was a strengthening of the various members in their intention to, in one manner or another, make it clear to the retail trade in their section, that the price of the car in that section is not the maker's advertised price, but that price plus the freight and handling.

J. C. Thorpe, of Urbana, Ill., said that what was needed was more backbone on the part of the dealers in the matter of getting from the customer these extra costs, instead of letting him have the car at the factory price in order to make a sale.

Convention Endorses Stevens Bill

A discussion in regard to the Stevens Price maintenance Bill resulted in a resolution passed by the Association in favor of that bill, and the appointing of Jacob Friedman and L. C. Steers as a committee

to work for the bill among the members of the Association.

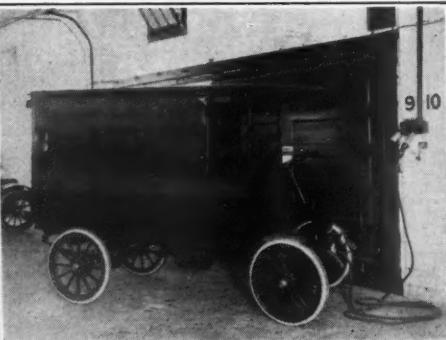
F. A. Bean, of Detroit, reported on Compensation and Liability insurance with reference to a uniform method of handling this for members of the Association, and reported that a committee appointed for investigation of the subject had found the Employers' Indemnity Co. of Kansas City, to fulfill the conditions which would make it possible for the garagemen to do business with them. He also pointed out the considerable reduction in insurance rates possible if the garagemen take advantage of all the credit and rebates offered.

J. C. Thorpe presented a series of resolutions, as formulated by the Garage Owners' Association of Ill., in regard to the announcement of new models, definition of the dealer, the relations of the jobber and the dealer, etc. These were adopted. A resolution was passed protesting against the practice of certain manufacturers selling cars to users at dealers' prices; in other words, to the curbstone agent, and a suggestion was made that the dealers of this association report all such sales to the National secretary, so that action could be taken by the National body in this matter.

The problem of second-hand car selling was also discussed, and F. E. Avery, of Columbus, Ohio, outlined the method employed by the Dealers' association of that city.

A STORY WITHOUT WORDS

"Some Pictures and a Few Words" is the title of a new booklet produced by The New York Edison Co. which sets forth pictorially the advantages of the electric automobile over the horse-drawn vehicle. No end of material has been written on this subject, and volumes of statistics prepared, but practically the whole story is told simply and graphically in a score of pictures, a sample of two of which is shown in this little book, which has not a line of copy except the captions of the pictures. Nothing could be more convincing or vivid than the photographic evidence which it contains of the superiority under all conditions of the electric over the horse and wagon in delivery service. The keynote of the whole proposition is comparative economy, economy in operating cost, in care, in room occupied when not in use, in space occupied at the loading platform or at the curb and in dependability under adverse weather conditions. The book is the collaborated effort of the Automobile and Advertising Bureaus.



The Horse Eats Every Day in the Year—Expensively. The Electric Requires Current Only for the Work it Does

The CCJ has most readers because it gives most information

CCJ Newslets

A Viennese engineer by the name of Von Dunikowski has invented a tire the casing of which is made of willow and birch fiber while an ordinary tube holds the air.

Unused pleasure and commercial cars, accessories and spare parts are exempt from import duty in Paraguay for a period of two years from November 9, 1915.

It is estimated that over four thousand American farmers are now using motor trucks. This is about 25 per cent. of the total number of trucks sold in this country.

A motor ambulance has been presented to the American Red Cross Society by Mrs. W. L. Velle, wife of the president of the Velle Motor Vehicle Co., for European war service.

At the Detroit show, which closed on January 22d, there were exhibited, beside pleasure cars, thirty gasoline commercial cars, twelve chassis and ten electric passenger cars.

During the recent Chicago National Automobile Show a movement was started looking toward the possibility of a motor truck show to be held next year during the week of the pleasure car show.

There are about sixty thousand motor vehicles, worth \$60,000,000, on the fighting lines in France. The machines are undergoing the hardest kind of work and yet but 25 per cent. are under repair.

Fifty artillery horses were recently sent to the Illinois National Guard. Two were dead on arrival in Chicago and nineteen required medical attention—the result of shipping fever. Such is horse life!

At a recent meeting of Ford stockholders they assigned and executed a quit claim to Ford personally of all interests and rights in the farm tractor business. The tractor enterprise will be conducted entirely by Henry Ford and his son, Edsel, under the name of Henry Ford & Son.

Following its announcement of promoting to positions of importance only those who are native born or citizens of the United States or those of foreign birth who have relinquished their foreign citizenship and filed with our Government their first papers applying for citizenship, the Packard Motor Car Co. reports that during the first few days an increase of 50 per cent. in application of first papers was made. Not one resignation has resulted, although 20 per cent. of the workers at the factory are not American citizens.

Registration figures show that there are 6237 vehicles on solid tires in use in Pennsylvania, including all types, and 70,173 on pneumatics. There were 6864 gasoline trucks, including those on both solid and pneumatic tires, on July 1, 1915.

Firestone tires were used on the Saurer truck which hauled 13-ton steel girders up to the top of Mount Wilson. This remarkable hauling stunt was published in the last issue of our Journal; 37x5 in. tires were used on the front wheels and 43x6 duals on the rear wheels.

The Bridge Department of New York City has contracted with R. E. Taylor Corp., eastern distributor for Garford trucks, to remove snow from the New York City bridges during the winter. The trucks are equipped with front-end snow plows. The compensation will be \$35 per truck per 8-hour day.

Louis Peter Rubber Works, Germany, has developed a new form of tire designed particularly for military motor wagons. The tire is applied by hydraulic press in the customary way, and consists of a steel band wound with compressed paper and an outer tire of steel.

Wilmington, Del., dealers are so pleased with the success of the second annual show held during the week of January 17th that they are considering the possibility of having a truck show, too. There is some talk about buying a temporary tabernacle, as the chief concern is the difficulty of securing a conveniently located building.

The motor repair shops of the Allies report that solid tires, which under ordinary commercial service have a life of from 10,000 to 15,000 miles, do not average more than 1500 miles in war duty. Cheaperening of the rubber compound entering into the construction of military tires and shoddy manufacture is given as the cause. Evidently someone over there is making money.

A new law has been passed in Wisconsin relating to upholstery and repairing of upholstery of automobiles. This law, effective January 1, 1916, required labeling of all upholstery to show the kind of material used, and is supposed to promote sanitation. The far reaching effect of the law on manufacturers of vehicles can be readily seen. Up to this time there have been no violations and no arrests.

According to a recent test made under the supervision of Colonel C. A. Gresham, U. S. A., four Moreland distillate trucks displaced fifty horses and made more distance in 1 hour and 30 minutes than the battery could make in 24 hours when drawn by horses. The average speed of horse-drawn artillery is four miles per hour. Colonel Gresham recommends the fitting of field artillery with rubber tires and ball bearings so that it may be hauled in future by motors.

Geo. Rodgers, a road constructor in Southern California, now has only four commercial cars, where less than three years ago he kept thirty horses and mules. These cars are used in conjunction with a traction engine which does the double duty of pulling the plow and operating the steam roller. One of the trucks is fitted with a dump body, another is a combination oil wagon and dump and the other two are equipped as oil spraying wagons for use in road work. It formerly took six and eight horses to pull each of the wagons, which had less than half of the capacity of the present motor outfit.

Some British Commercial Car Requirements

The American Influx Expands Experience

By OUR FOREIGN CORRESPONDENT

 IN Great Britain we have now had an unprecedented chance of comparing American and British standard practice in commercial car construction, and are now able to see some signs of crystallization of the gigantic experience afforded by the war. These

two features should be sufficient basis on which to form an anticipation of future British requirements, if indeed, we may not say present requirements. Hitherto I have refrained from writing on this subject, however, because there has been an agitation in favor of modifying heavy motor laws in the United Kingdom, and a Commission is now enquiring into the subject. As to this, however, the general trade opinion now is that, while the recommendations of this body may result in a more strict enforcement of the axle weight limits of heavy steam wagons, even if the weight limits were modified, the gasoline truck is not likely to be affected. In a survey of general requirements it is obviously impossible to give details of all types. I therefore take as representative the special sizes affected by the British War Department subsidy scheme, because these sizes are more particularly affected by modifications in the trend of design.

The British Believe in the Tubular Radiator

Beginning from the front, we first have the modern tendency to protect the radiator as introduced by the military specification. There are two ways of doing this, either by a stout tubular bar lying across the radiator front and carried in brackets strongly riveted to the frame longitudinals, or by three or four round iron bars of much smaller diameter, lying horizontally or vertically, and bolted to the radiator sides or headers, for headers and radiator frame are now always cast in the best type of commercial car of any size—sheet metal is not used.

A tubular radiator is much preferred to a cellular construction. With a British user this is an important point. The most favored type is made up with a large number of small plain copper vertical tubes, secured top and bottom into good substantial brass tube plates, to which are detachably bolted covers that complete top and bottom headers. These are spaced apart by vertical standard castings on either side, the whole constituting practically a frame which is usually, though by no means always, carried from the chassis frame on trunnions. As the War Department specify the main radiator measurements for subvention vehicles, replacement of the radiator is thereby made quite easy.

In engine size one can only generalize. For what the military call 3-ton and 30-cwt. vehicles (for civil purposes we may call them 3½ and 2 ton) a minimum bore of 110 mm. for the larger, 100 mm. for the smaller size is specified—four cylinders, of course, in both cases. This will give an idea for other truck sizes.

In the engine of the future either the cylinders may be made to lift more easily, or they may be provided with holes through which scrapers can be operated and carbon deposit abstracted, as in the Standard light car. Though at present there are no signs of such development, I believe, they will come.

Some Points in British Engines

The big end and main bearings must be accessible; already the former usually are, but the latter by no means always so. Though in Europe there is a prejudice against what is called the assembled car with one main part made by one firm, and another by another (doubtless fostered by manufacturers of the complete vehicle) the British manufacturer is being more and more driven to specialized manufacture, especially by recent events, and the Dorman engine, which has passed the test for war department purposes, is now fitted on a large percentage of British made chassis. Consequently, this engine promises to exert marked influence. It is arranged with the carburetor on the right, and with a water pump and magneto driven off the same shaft on the left. All these items are placed low down, but though the crank chamber inspection covers are on the right, the carburetor does not stand in their way. On the other side the magneto and pump are well below the encased tappet gear, which is free of access. On this side the ribbed exhaust manifold is easily detachable by slackening back two yoke nuts, but to undo the inlet manifold on the other side means breaking a water joint (for the intake is water-warmed), and two flanged joints.

The tendency for the yoke construction to distort the cylinder castings is generally recognized, but it is conceivable that with the two manifolds on opposite sides of a yoke bolt carried right through, the cylinder casting, this distortion may be avoided by balancing the pull on the one side against that on the other. With such an arrangement it is quite conceivable that simultaneous loosening of both manifolds might be avoided. With such an arrangement the detachable part of the intake would be short, but its length in the cylinder head could still be water-warmed.

Some eight or nine years ago, smoky exhaust brought the heavy motor into trouble, and this more than anything else developed forced lubrication. The commercial car user of the future will insist on only one feature not now generally provided, and that is a strainer and pump that can be withdrawn without loss of any oil, and without involving other parts. Moreover, the oil strainers will probably be much bigger than at present.

Governing Big Car or Engine Speed?

Carburetion shows no sign of development, but automatic throttle control does. Some years ago there was a reaction against the use of governors; now the governor has again come into favor, but

a recent design raises a point in governing. Is the governor to limit engine, or car, speed? On the car in question the engine is limited by a governor on the tail-shaft of the gear box, limiting the car, but not the engine speed. The driver can race his engine as much as he likes. I do not think this arrangement will be perpetuated. If the governor is on the engine, the engine and car speed can both be limited, if on the gear box only the car speed. Surely the whole control is better than the half? As to the rest of the control military requirements certainly tend to induce arrangements to a standard. These have already been published in the CCJ.

Cheap Repairing

In all present design the most noticeable feature is the attention given to facilitate and cheapen withdrawals, replacements, renewals and adjustments. Designers are realizing strongly that maintenance cost is the essence of truck working. While British dealers and users have, largely thanks to American chassis, learned to appreciate the dry plate clutch, I do not think that this form is likely to oust the leather cone—this on the score of simplicity. But the leather cone clutch will have to be more easily removable than is often the case; it sometimes happens that the flexible couplings make removal more awkward. There is a tendency to make clutch stop, as well as the clutch bridle, horseshoe shaped to allow the clutch shaft to be dropped when necessary.

More Allowance for Frame Flexibility

We have learned a good deal from you about the unit form of construction. We may see more of this, and of engine and gear box mounted on a separate and withdrawable sub-frame carried from three points of the main frame. Little as the gear box often adds to the size of the engine, for some reason or other it is held that a complete power unit must be three-point suspended, though this is not necessary for an engine alone. Opinion in Britain favors the three-point, but experience has shown that beyond certain engine sizes the construction is not altogether happy; that size might be put at a cylinder bore of 4½ in. In the main three-point suspension will undoubtedly find favor, especially when properly carried out, which is seldom; ordinarily each support extends for quite a length along the frame members, amounting to the equivalent of two supports placed fairly close together. Flexibility of main unit parts relatively to chassis frame is being more and more appreciated, and correct forms of suspension are now making more appearance.

Transmission Systems as Varied as Ever

The general arrangement of transmission seems as far off settlement as ever. Before the war there was a tendency towards live axle—bevel or worm drive, the

former preferably with the double reduction gear. When last winter's rains made the Continental roads a quagmire the crown wheel casing on the axles in some cases got in the way, and there was some reaction in favor of the jackshaft and side chain drive. Some of the chain driven cars indeed exceeded expectation, but according to latest advices many of the cars putting up the best performances at the front were live axle vehicles, some bevel and some worm driven. Nevertheless, some worm driven cars have not done well; but were not intended for such work. Still public opinion does not discriminate, and seems setting in favor of the double reduction live axle bevel drive. I think this opinion is partly formed by the contention that with the engine reduced to slow running by a heavy load, as on a hill, the double reduction bevel is the more efficient. Certainly it can often get up without gear changing, when the worm-driven car has to change down. At higher speeds quite possibly the worm, by obviating additional reduction gearing, is the more efficient in spite of its sliding contact as compared with the rolling contact of the bevel gear.

Rack-and-Pinion Drive

In my opinion, however, much might be done with the rack and pinion drive. We have had a big experience with this in the early days, and an enormous number of cars in London had this transmission. The cars of all one make were wonderfully good, but also wonderfully noisy. The gear teeth were actually cast, not cut, and the noise they make would not be allowable now. Then came the later model of the same make, not so good, but quieter with cut teeth. Even these were by no means quiet, however, and though many experienced operating engineers still swear by this form of transmission, it is not what one might call popular. One or two American makes, however, have shown that the rack drive can be quiet. But in the usual rack drive the pinion jackshaft is carried in front of the axle on perch bars: consequently it offers no better clearance than a live axle. I believe there is an opening for a transmission like that on the old Swiss Berna of some ten years ago. In this the pinion jackshaft was carried by and above the axle, the pinion meshing with the racks at the top dead centers so to speak of the latter. The trouble in this was that, as the bearings wore, the pinion wheel came out of true pitch, causing wear and noise, but there seems very little difficulty in providing adjustment to remedy such a trouble, and the transmission is one affording a good reduction through an efficient form of gear, and a fine axle clearance. At present the live axle with propeller shaft drive still seems the favorite transmission, but American cars have introduced considerable variety.

Propeller-Shaft Types

We have seen chassis with gear boxes in one unit with the engines, and others with the gear boxes separate from, but close to, the engines, in both cases involving a long propeller-shaft. In European design this shaft would be solid and very heavy. In American practice it is tubular

with the joint ends welded on. Such an arrangement runs against British prejudices, but seeing is believing, and, if this propeller-shaft stands up to its work (I have heard of no trouble in this direction) it ought to be a good thing for design. The very long propeller-shaft, however, whether the solid or tubular, does not meet with the approval of a certain school of engineers, and to them the chassis with gear box somewhere midway between engine and back axle will appeal. Some indeed so mistrust the long propeller-shaft that they have had American designs with these long shafts modified—practically cut in half, with the tail end of the front half supported in a steady bearing mounted on a frame cross-member, and the front universal joint fitted behind this steady bearing. The arrangement rather suggests the old de Dion chassis. This may have advantages over a very heavy long single propeller-shaft, but assuming that in the tubular construction the welds give no trouble, it is difficult to see what advantages the divided shaft arrangement offers over the tubular shaft, for it practically doubles the angular movement on the universal joints, adds to cost, and depends on an isolated bearing liable to neglect.

Spring Resistance in Proportion to the Load

Many of the heavier horsed wagons in Europe have for many years had bumper springs, the main springs being only strong enough for comparatively light loads. As the load deflects these main springs, more and more of the weight is carried by the additional spring between the body and back axle. For the last ten years or more the writer has been urging the use of subsidiary springs on this principle for motor trucks, but with the exception of one or two firms like Leyland, little has been done, until recently. Now, however, several designers are adopting them, the best arrangement to my mind being the volute spring on the Wells chassis already described in THE COMMERCIAL CAR JOURNAL. The advantages of the volute springs have not been adequately appreciated. It offers the great advantage of perfectly progressive action, in that the lightest loads are absorbed in the deflection of the larger coils, and the heavier loads by the smaller and stiffer coils, in exact proportion to increase of load. This action is as graduated as the spiral of the volute.

Cheap Parts for Spares

The chassis of the near future is going to be maintainable in order by very easy replacement of worn parts but comparatively cheap parts. No where is this more attempted than in the spring suspension arrangements. In some quarters there is a tendency to avoid wear as much as possible, and so we find the free ends of springs fitted with large surface guides or slippers that with the play of the spring slide up and down on slipper blocks formed in one with the spring hanger brackets. Cheaply renewable liners are fitted to take wear, and when shackles are fitted though the shackle bolts are hardened and ground steel, in the best cars the holes into which they fit in both

shackles and spring eyes are bushed, and the bushes can easily be renewed.

Frame Support Between Springs

Growing insistence is being laid on the location of a cross member between the front ends of the rear springs. Several British designers have already pointed out to me the tendency of the springs to exert a sort of rolling inward action as they take the load. In some chassis, both from your side and ours, there is no cross member exactly at the back end of the frame, an arrangement which lends itself to increase of length to special requirements.

Increasing Adjustment Range

Another point on which modern designers are strong is the method of fixing levers on rocking shafts. In some steering and brake levers, for instance, it is very convenient to extend the possibilities of adjustment by alteration of the lever positions. Partly for this reason the castellated seating is being more and more used: sometimes the castellations are so small that "serrations" would almost more aptly describe them. When the full adjustment has been taken up with the lever in one position, it can often be moved by one serration or so, and the full range of adjustment again be worn through with the lever in this position. These castellated seatings are more particularly in evidence on the worm sector shaft of the steering gear, and on the shafts of the brake-drum cams. This is not the only reason, of course, for these castellated seatings, which are better in every way than the old practice, and lend themselves to modern manufacturing conditions. Occasionally the extra range of adjustment is afforded by the ends of the brake levers themselves, which are formed into quadrants with a series of holes drilled in them; thus when adjustment has been taken up on the connecting rod coupled up to the leading hole, a fresh range can be obtained by taking up on the next hole, and so on.

Same Size Wheels

Your American practice of having the same diameter wheels back and front is likely to be followed, since trucks of your make have been over here. We had native designs with all the wheels the same diameter before the war though few English designers would think of doing this.

But wheels over here will be steel. When made of wood oak is used for these heavy vehicles, but we have found them very creaky: dependable second growth hickory costs too much over here: often it is unobtainable: indeed you get the pick of the market, and we only come in for leavings. Consequently our road wheels are of steel castings. For these we were largely dependent on Belgium, and when the war broke out there was a shortage, so some makers had to use wheels built up of plate steel. Some of these have resulted in quite good design, which may compete with the steel castings, even when a full supply of the latter is available.

Steering Gears and Details

The sector is rapidly being displaced, nearly all cars now with steering on this principle have a complete worm wheel of hard bronze in conjunction with a hardened steel worm, so that, as the wheel turns,

fresh and unworn surfaces can be brought into operation. In most of these gears the casings are made to allow of easy removal of the gear. I know of some old designs where it costs more to remove the steering gear than to renew it.

Some designers seem coming round to the nut and worm form of steering gear, on the ground that this gear brings larger bearing surfaces into action. One thing that British designers will probably have learned from the American invasion is the value of an adjustable cross-tie steering connecting rod. The importance of this in saving tire wear, by keeping wheels in alignment is generally under-estimated, but it is coming to be realized. Finally as regards steering gear, the knuckle joints should be made larger than is often the case to allow of their being bushed for wear without undue weakening.

The introduction of the floating axle makes possible easy withdrawal of the dif-



Wichita Trucks Haul Sears-Roebuck Mail

The immense amount of mail which is handled by the Dallas, Texas, branch of the Sears-Roebuck Company, is carried by the two Wichita trucks illustrated above. About two thousand sacks of mail are hauled daily, keeping the trucks going continuously. These trucks are made by the Wichita Falls Motor Company, Wichita Falls, Texas.



Tractor and Semi-Trailer Carry an Unusual Load of Tires

The E. T. Towar Company, of Detroit, Mich., recently delivered in a single load, to a large Detroit automobile company, 1115 tires, a paying load of 8 tons. The load was carried in an unusually large stake-side semi-trailer, pulled by a Knox tractor. An interesting feature of this large-unit delivery was that the tractor, because of its short turning radius, was able to drive directly into the stock room, and to turn around and drive out again after unloading.

ferential, and in nearly all live axle cars now the differential can be lifted out without dismantling the axle, merely by withdrawing outwards the floating axle shafts. In the double reduction gear the problem is complicated, but even in these the differential as well as the double reduction gear is withdrawable. The complete center part of the axle sometimes being divided up so that it can be lifted away in two or three parts by a single man. In some few cases designers arrange for two ways of withdrawal of various parts, so that if the one way is blocked by an accidentally bent frame member, there will still be a back door left. The floating axle is becoming practically universal and here again we see the cheap maintenance influence. In the best practice the axle shafts are castellated at the inner ends where they fit into the differential sun wheels, and if they are a useful fit they are a tight fit. The other end of the shaft is formed as a flange bolted on to the hub of the wheel, and therefore, to withdraw a shaft often, in addition to the bolt holes, two diametrically opposite holes are drilled

and tapped in this flange to allow a couple of bolts with their ends forcing against the wheel hub to draw the flange and axle shafts outwards from the seating in the differential sun wheel. In others the drive is made from the axle shaft to the wheel by dogs, the jaws of which engage with jaws on the wheel hubs, in which case the axle shaft end is frequently tapped and the shaft can be started and drawn by a bolt acting through any piece of iron placed across the hub of the wheel to give it purchase. In other cases the outer ends of the shaft are castellated to fit into the inside of the wheel caps, which latter are bolted to the wheel hub. In this latter case, if they fit more tightly at their outer ends, they are drawn from the differential, otherwise they may be drawn on the same principle as the dog clutch shaft in the previous case.

Motor Truck Club of New Jersey, Newark, has engaged a lawyer on yearly salary to look after the interests of the motor truck owners in the State, etc. He will act as chairman of the legislative committee of the club.



Jeffery Employees at Noon Hour

The prosperous condition of the automobile business is graphically illustrated in the above photograph, which shows 2700 employees of the Thomas B. Jeffery Company, Kenosha, Wis., assembled at the noon hour, in the courtyard back of the Jeffery offices. The Jeffery Company this year is employing, including the night shift, nearly 3000 men as compared to 1300 a year ago. During the first six days of December the Jeffery Company shipped more cars than were shipped during the entire month of December a year ago.

Activities of the Motor Truck Association of Philadelphia

OFFICERS

LEE J. EASTMAN
President
J. D. HOWLEY
Treasurer

O. J. DOOLITTLE
Vice President
W. H. METCALF, Sec'y
328 N Broad Street



BOARD OF GOVERNORS

H. M. COALE E. M. BARTLETT D. H. ZIMMERMAN
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COMMERCIAL CAR JOURNAL OFFICIAL ORGAN

The regular business meeting was held on January 19th, at the Hotel Adelphia. Vice-President Lee J. Eastman was in the chair, owing to absence of Emlen S. Hare, President of the Association.

Vice-President Eastman asked for a suspension of business in order that action might be taken on the death of Harry L. Cooper, a member of the Association, because of his connection with the International Motors Co. Mr. Eastman referred feelingly to the deep regard in which Mr. Cooper had been held by his colleagues in the organization. Suitable resolutions were adopted to be sent to the family of the deceased, and it was arranged to have a committee attend the funeral.

Acting for President Hare, Mr. Eastman announced the appointment of the following chairmen of committees: Entertainment, R. E. Chamberlain, of the Garford Company; Publicity, George Simpson, of the Goodrich Co.; Traffic, C. A. Barden, of the Chicago Pneumatic Tool Co.; Reception, L. L. Woodward, Fitzgibbon & Crisp; Legal, H. C. Adam, of the International Motors Co.; Membership, F. W. Eveland, of the Eveland-Yerkes Co.; Good Roads, J. Philip Fowler, of the Eastman Motor Truck Co., and Attendance, Louis Hynemann, Republic Motor Sales Co.

The meeting was thrown open for a general discussion of methods by which membership of a desirable kind could be increased, of how a greater sociability could be built up among members, of the kind of speakers who should be obtained for the various meetings, and of the planning of entertainment features.

By unanimous vote of all the members of the Association, E. B. Jackson, the retiring President, was unanimously elected to Honorary Membership of the Association.

Lee J. Eastman Elected President

At a meeting of the Board of Governors of the Motor Truck Association of Philadelphia, held on January 25th, Lee J. Eastman, Manager of the Packard Motor Car Co. of Philadelphia, was elected President to fill the vacancy made by Emlen S. Hare, who was elected President at the annual meeting in December, 1915, and who resigned due to the fact that in his new position with the Packard Motor Car Co. he would be required to spend a considerable part of his time in New York, which would not allow him to devote the necessary time to the duties of President of the Motor Truck Association of Philadelphia to do the position justice.

O. W. Doolittle, of the Foss-Hughes Co., Philadelphia, was elected to the office of Vice-President and W. Ross Walton, of the Firestone Tire and Rubber Co., Philadelphia, was elected to the Board of Governors to replace Mr. Doolittle.

Mr. Eastman was one of the original members of the Motor Truck Association, being very active in its management and upbuilding, serving not only on the Board of Directors, but at the annual meeting in December, 1915, he was elected to the office of Vice-President. In the election of Mr. Eastman to this important post, the Motor Truck Association of Philadelphia has secured a man of experience and executive ability.

Since the formation of the Motor Truck Association, much good work has been accomplished and the present year should be a banner one, and much will be accomplished along the lines of activities laid out by Mr. Eastman. In fact, the Traffic Committee, as well as the Good Roads Committee are on the job with an abundance of enthusiasm and new ideas to develop in the betterment not only of traffic conditions within the city limits, but the betterment of road conditions generally.

The work of these two committees is of vital importance not only to the motor truck trade in general, but also to the owners of motor trucks and superintendents of deliveries, and it might be well to reiterate that at the annual meeting in December, 1915, an amendment was made to the constitution and by-laws of the Association which makes it possible for truck owners and delivery superintendents to ally themselves with this hustling organization, which, through the character of the work it carries on is not only interested in the sale of the motor truck, but is also interested in working out ways and means whereby truck owners and superintendents of deliveries can greatly increase the efficiency and reduce the operating expenses of their trucks.

Not to be outdone, the Entertainment Committee has outlined a very interesting programme, having planned several amusing and instructive entertainments not only for the members of the Association, but also motor truck owners.

Federal Motor Truck Co., Detroit, has brought out a new 2-ton model to sell at \$2100. The wheelbase is optional with the purchaser, either 144 in. or 168 in.; the engine is a Continental 4 1/8 x 5 1/4 in.; ignition, single; gears, selective sliding gear type; axle, floating; springs, semi-elliptic; front solid tires are 36x4 in.; the rear ones 36x6 in. single, or 36x4 in. dual.

The Goodyear Tire & Rubber Co., Akron, Ohio, has issued nine bulletins on the conservation of truck tires, pointing out the avoidable sources of tire trouble, and showing how remarkable tire mileage is often obtained. It was brought out that when a truck is run on a car track the narrow edge of the tire resting on the edge of the track is obliged to carry the whole load, and consequently that part of the tire wears more rapidly than any other part.

FALLACY IN REGARD TO FRICTIONAL ELECTRICITY FROM POURING GASOLINE THROUGH CHAMOIS

To the Editor:

A considerable amount of interest has been aroused among motorists by the publication of an article in a certain automobile accessory house organ of large circulation, to the effect that the action of straining gasoline through a chamois generated a charge of static electricity sufficient at times to ignite the gasoline and cause disastrous results; and this article has been reprinted and given wide circulation by one of the automobile insurance companies.

In the interest of Marmon owners, the Service Department of the Nordyke & Marmon Co. has had this situation thoroughly investigated, and eminent authorities seem to agree that there is nothing whatever in the report that passing gasoline through a chamois generates an electrical charge.

In this connection, the report from Arthur L. Foley, head professor of physics at Indiana University, is of interest. He says, "Pouring gasoline through a funnel with chamois strainer does not of itself produce a charge, and it makes no difference whether the funnel is supported by a person or by the gas tank. The article is in error in saying that the funnel is grounded when in the tank, and insulated when in the hand. If there is insulation in either case, it is more likely when the funnel is in the tank, as the car stands on rubber while the man usually does not."

"As a matter of fact there would be very rare cases, indeed, when both were not grounded for potentials, sufficient to produce a spark. But on a day when the atmosphere is very dry, as it is usually on a cold, clear day, a man may become charged by scuffling about on a clean dry floor, or his clothing may become electrified by friction, as noticed sometimes when combing the hair."

"Under such circumstances pouring gasoline through a funnel, whether or not there is any chamois in it, gives rise to induced charges that are quite too complicated to undertake to explain in a few words. Such charges might fire the gas. Indeed the original friction charge might do so under certain circumstances."

NORDYKE & MARMON CO.

R. M. Goode, manager of the Paris branch of the Packard Motor Car Co., has severed his connection with that company. No arrangements have been made for his successor and it is understood that the Paris office will be closed. This will not interfere with the Packard truck business in France, however, which is handled directly between the factory and the French army. Mr. Goode has connected with Gaston, Williams & Wigmore, Ltd., and with his brother, Keith Goode, will have charge of the French and Italian markets for that company.

THE COMMERCIAL CAR JOURNAL

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THE TRUCK MANUFACTURERS' ATTITUDE IN REGARD TO DEALERS, RAPIDLY CHANGING

 In the marketing of commercial cars there has been an unusual unanimity of opinion in so far as the necessity of selling through agents is concerned. A few notable examples, however, of manufacturers who did not believe in the value of the agent and who felt that trucks could be marketed through direct representatives or branches, have stood out as a question mark to the new manufacturers coming into the field.

These few have interjected the insidious doubt into the minds of those who are not certain of their policy, that perhaps trucks could be successfully marketed without the dealer. Fortunately for all concerned, the number of manufacturers holding this belief has gradually decreased. This is particularly true during the last two years, during which time some of the standbys of the no-dealer method have realized the error of their ways.

That this should be the case is not at all surprising, as the notable successes in the industry, with perhaps two exceptions, have all been made through the agent and dealer.

It is now generally accepted as an axiom that commercial cars cannot be economically marketed in quantity through direct representatives or branch houses alone. The mass of

them must be handled by men whose daily bread depends upon their making a success of selling the vehicles in their respective territories.

The dealer, as the logical and only practical solution of the sales problem is being made more noticeable each month as the number of small trucks for light delivery service increases. The manufacturers of this class of vehicle realize that quantity production is an essential, and that National distribution can only be obtained through numerous agents. It follows that as the number of manufacturers of light commercial cars increases the dealer will be brought more and more into the limelight, and will at last dominate the field of truck selling.

DEALERS' ORGANIZATION SHOULD PROVE OF GREAT VALUE TO THE RETAILERS OF THE COUNTRY



THE recent organization of the dealers and garagemen in an association known as the National Retail Automobile Trade Association, should prove a power to the dealers throughout the United States handling trucks as well as pleasure cars, provided they will affiliate and help to make the organization truly a national one in power, as well as name.

There are many questions which confront the dealer which can be settled to his advantage by means of the co-operation afforded by a strong national organization which, in trying to handle the matter as an individual, will be settled, in all probability to his disadvantage. This association should embrace dealers of both pleasure cars and trucks, those handling accessories, and also those operating garages, as from 85 to 90 per cent. of the dealers are also garage operators.

These interests are so interwoven that there seems to be no valid reason why there should be separate organizations for garagemen, pleasure car or truck dealers or accessory men. The above mentioned organization, if properly supported by the interests mentioned, will undoubtedly prove a power to the automobile industry, which will help not only to raise the standard of the garage business but assist the army of dealers to solve satisfactorily many of their problems.

CHAUFFEURS' INSURANCE RATES LESS THAN HORSE DRIVERS'

Under the new Workmen's Compensation Law, the insurance rate in Pennsylvania for drivers of horse vehicles is \$1.20, while that for chauffeurs is but \$1.05. When the insurance companies make a distinction of this kind in rates, it is always based on statistics which show percentages. This case is no exception to this rule, and the insurance companies report that the percentage of accidents with horse-drawn vehicles is much larger than with motor driven vehicles, and, therefore, the rate has been placed as above mentioned.

The truth of the matter is that more publicity is given to every automobile and truck accident than to horse accidents. The newspapers and other public prints grasp the news value due to the newness of the automobile industry, and therefore, feature accidents which are lightly passed over when equally fatal but occurring with the ordinary horse equipment. It is by such figures as these that the real state of affairs is brought to light.

DOES NOT TRANSPORTATION PREPAREDNESS INCLUDE TRUCKS?



A PECULIAR and almost unbelievable condition is now presented in the preparedness campaign of the United States.

When Secretary Daniels of the Navy called for two representatives of the Society of Automobile Engineers as members of the Naval Advisory Board the automobile industry believed that the great value of the automobile in times of war was surely recognized by the powers that be in Washington.

Now, however, we are face to face with the anomaly of automobile engineers assisting the Navy and not being called upon to assist in the new movement of the Army transportation preparedness. If automobile engineers are of service on the Naval Advisory Board, how much more valuable must they be in connection with the work of transporting rapidly and efficiently the mass of our troops and their accoutrements of war, not only at the front where railroads and other transportation methods fail, but also at any place in the war zone where sudden and large movements are necessary.

It is, therefore, with considerable surprise that we note the omission of President Wilson of the Society of Automobile Engineers from the list of those organizations called upon by him for co-operation and assistance in the problem of military preparedness.

FUEL EFFICIENCY OF PRIME IMPORTANCE IN SIX-CYLINDER TRUCK ENGINES



THE question of the number of cylinders has been agitating the pleasure car branch of the automobile industry, and bids fair to be introduced to a limited extent into the field of trucks. It is noticeable that slowly but surely the 6-cylinder engine is coming into use as the propulsion unit of several well-known makes of commercial cars. As the business man becomes more and more familiar with the 6-cylinder engine in the touring car and appreciates its smooth running and overlapping impulse possibilities which militate toward longer life of the vehicle, it is but natural that he should accept, without much question, the same type of engine in his commercial car.

There is, however, one feature which must be reckoned with by the makers of 6-cylinder trucks, namely, fuel consumption. With the present price of gasoline, the fuel consumption is a very appreciable item with the truck, much more so than with the pleasure car. On vehicles which ordinarily make but four to six miles on the gallon, and which are operated from ten to twelve hours a day, the gasoline cost is a considerable item. Not only does it amount to a figure which is very appreciable, but unfortunately it is one of the most noticeable items and the one first mentioned and thought of by the possible purchaser.

Tractor Club of Kansas City has been organized by local representatives of fifteen manufacturers of tractors. The officers elected are: A. J. Pray, president; W. F. Roth, vice-president, and Guy H. Hall, secretary-treasurer.

Convertible Motor Truck Co., 48 W. Chestnut Street, Columbus, Ohio, has been formed for the purpose of converting Ford chassis into commercial cars by using internal drive rear axle with heavy rear wheels and solid tires.

The CCJ has most advertisers because it gives them biggest returns

For these reasons, it is of prime importance to the manufacturer marketing a 6-cylinder commercial car that his gasoline consumption, or in other words, the fuel efficiency of his engine be most carefully looked into. This fact alone will undoubtedly influence to an extent, not generally appreciated, the rapidity or the slowness with which the 6-cylinder truck engine is accepted.

Steel and Rubber Markets

Steel Demand Continues Despite Price Advances

During the month of January a lull was felt in the influx of munition orders. The week prior to the date of this writing, however, many shell steel inquiries have appeared. French agents are asking for deliveries up to July of 1917. Makers of automobile and agricultural implements who usually contract for steel for the fiscal year beginning July 1st are already making inquiries for the last half. Rail orders for the month of January totalled 239,300 tons. Prices on finished materials continue to advance and consumers are placing orders as far in the future as mills will accept. Quotations on February 10th were:

STEEL PRODUCTS PRICES

Bessemer billets, per ton, mill	34 00 a
Open hearth, per ton, mill	35 00 a
Sheet bars, per ton	35 00 a
Forging billets, per ton, mill	55 00 a

The above prices are at tidewater, in carloads and larger lots. For quantities less than 2000 lbs., but not under 1000 lbs., \$2 per ton additional is charged, and less than 1000 lbs. \$8 per ton additional.

SHEETS

The following prices are for 100-bundle lots and over f. o. b. mill; smaller lots are \$2 per ton higher.

Gage	Black	Galvanized
Nos. 10 and 11	2 25 a ..	3 75 a 4 00
No. 12	2 25 a ..	3 85 a 4 10
Nos. 13 and 14	2 30 a ..	3 85 a 4 10
Nos. 15 and 16	2 35 a ..	3 95 a 4 20
Nos. 17 to 21	2 40 a ..	4 10 a 4 35
Nos. 22 and 24	2 45 a ..	4 30 a 4 55

IRON AND STEEL AT PITTSBURGH

Bessemer iron, Valley furnace	21 00 a 21 50
Bessemer steel, f. o. b. Pittsburgh	33 00 a
Skelp, grooved steel	1 90 a
Sheared steel skelp	2 00 a ..
Skelp, grooved iron	2 10 a 2 15
Sheared iron skelp	2 20 a 2 25
Ferro-manganese (80 per cent.) seaboard	125 00 a 180 00
Steel, melting scrap	17 25 a 17 75
Steel bars (contracts)	2 00 a ..
Black sheets, 28-gage	2 50 a 2 75
Galvanized sheets, 28-gage	4 75 a 4 85
Blue annealed, 10-gage	2 50 a 2 80
Tank plates, $\frac{3}{4}$ and heavier	2 50 a

Rubber Prices Decline

Since our last report the price of rubber has dropped considerably. The price of Up-River fine dropped to the 73 cent mark on February 1st but since then has advanced to 75 cents. Quotations on January 10th were:

Para —	Brown crepe	81 a 82
Up-river, fine, per lb.	75 a ..	82 a 83
Up-river, coarse	56 a ..	
Islands, fine	70 a 71	
Islands, coarse	37 a ..	
Caucho ball, upper	60 a ..	
Caucho ball, lower	58 a ..	
Cameta	37 a 38	

Ceylon —	Corinto	57 a ..
First latex pale crepe	84 a ..	56 a ..
Tires—	Guayule	a ..

DOMESTIC SCRAP RUBBER	Balata, sheet	59 a 60
Automobile	Balata, block	40 a 47
Bicycles, pneumatic		
Inner tubes, No. 1	28 a 30	
Inner tubes, No. 2	11 1/2 a 12	

Unitube Auto Radiator Co., Rochester, N. Y., capitalized at \$200,000, has been formed for the purpose of manufacturing a new type of radiator. Directors: C. S. Cook, H. F. Beardslee, E. M. Sparlin and D. S. Crawford.

VARIED LINE AND TERM SALES SHOULD NOT BE DISCOURAGED BY MANUFACTURERS

Term sales are considered by Pacific Coast dealers as something inseparable from their staying in business, for the best firms in this locality demand an opportunity to buy trucks in this way. One of the most responsible and capable dealers on the Coast says that, on this account, factories should look into local conditions carefully before putting a taboo on term sales.

Another point regarding manufacturers' contracts on which a representative of COMMERCIAL CAR JOURNAL picked up some decided opinions among dealers was that manufacturers should not confine dealers to one truck. The argument is, that in the commercial car field, so few trucks of a single type and size are sold in one locality in a year that a dealer cannot make at the present commission percentages enough to give reasonable service and come out clear. He must have a touring car or different style of truck to afford sufficient sales to carry the necessary overhead.

Factory relationships in general, a clear-headed dealer believes, should be on a good human understanding basis. Factory men should make trips over their important territory once a year, and the man who makes the trips should be at or near the head of the business. A visit from a reliable, level-headed man who knows the business, can make suggestions with authority and equally so with promises, helps things along. The dealer hates to feel that the manufacturers' attitude is cold blooded. The manufacturer who treats his agents as if they simply were tools in his hands, taking the attitude, "Here's the car, give us the money, and keep out of our sight," is not likely to get much enthusiasm put in his campaign.

MAIS WILL BE MADE IN ALL SIZES

The Mais internal gear-driven truck factory, which has been taken up by the Premier Motor Corp. will continue to manufacture the Mais in the Mais factory, while the business will be carried on under the Mais Motor Truck Co. title. The characteristic Mais construction will be continued, and at the present time eight models are being offered, catalogued as Models C, D, E, F, K, L, H and M. The first two are 1½-ton machines, which are identically the same excepting as to wheelbase, Model C being 119 in., and Model D, 132 in. Price is \$2600, either size. Models E and F are 2-ton machines, 132 and 145 in. wheelbase, respectively, listing at \$2800. The 3-ton size is made in three wheelbase lengths, 132, 145 and 160 in. Price, \$3300. The 4-ton machine has 132-in. wheelbase, and lists at \$3750. All the prices mentioned are for chassis only.

The Mais engine is manufactured by the Mais Co., and is made in two sizes, the one of 24½ h.p. rating being used in the 1½ and 2-ton trucks, and the 34½ h.p. size in the 3 and 4-ton models. All parts of the car, such as the axles, transmissions, fenders, gas tanks, etc., are made in the

Mais factory, and only such parts known as accessories are made outside. Ultimately the Mais truck will be made in all sizes from 1000 lbs. to 5 tons. The lighter models will be placed on the market some time next summer.

NEW KNOX TRACTOR HAS WINCH

Knox Motors Associates, Mass., has produced a new type of tractor to operate as an independent unit for hauling four-wheeled trailers and is equipped with a winch. It will be known as the Knox Towing Winch Tractor, and is intended for special service such as pulling lumber on to trailers, which loads are subsequently to be hauled by the tractor. It is also adapted for bad roads. Where, with wheel traction alone the machine is apt to become mired, in which case the winch may be used to extricate it. A very large sprag is fitted to the tractor, this being brought into use when the winch is in operation. Between the cab and the winch there is a short body designed to carry a load up to 3 tons to aid in securing traction. The tractor is priced at \$5000 f.o.b. Springfield, and may be equipped with either standard wood wheels and dual solid tires, or with steel wheels having diagonal lug treads.

STUDEBAKER REDUCES WORKING HOURS

The Studebaker Corp., South Bend, Ind., has reduced the working hours from fifty-five to fifty a week, or nine hours a day for five days and five hours on Saturday. In order to adjust the wages to the new working schedule, all piece and hour rates have been increased 10 per cent.

Thompson Auto Co., Detroit, distributor of the Federal and Commerce motor trucks, has gone as far in giving service as possible not only operating a day and night service, but keeping watch on all Federal and Commerce cars. The members of the firm, as well as the employees, act as checkers for the company and if they see anything wrong with one of the trucks, it is at once reported and the trouble remedied before serious damage results.

FINDS TRUCK BUYER'S NOTES BETTER THAN REAL ESTATE SECURITY

Pacific Coast dealers have been very much perplexed at times, by the peculiar condition existing there, that practically all sales must be made on time payments. In most cases the dealers were not strong enough financially to take care of very much of this business themselves, and could not get help from their factory. In one city on the Coast a dealer put the proposition up to an individual who, up to the present time, has loaned out \$325,000 on this class of paper, and he and the dealer have been so successful in weeding out the "bad ones" before they got a chance to sign up an order, that they have never lost a sale or a note. This capitalist recently has made a tour of a number of cities with the dealer in question, and was very frank in discussing his experience, and said he believed that this class of paper was better security than real estate.

Correction: In the Annual Complete Commercial Car Review (Eastern Section), published in January on page 22, the captions of the Lippard-Stewart and White 1500-lb. trucks were transposed; in other words, the Lippard-Stewart caption was under the cut of the White truck, and vice-versa.

St. Cloud, Minn., purchased a Saurer auto sprinkler truck in 1913 at a cost of \$5800. It is doing the work formerly done by four horse sprinklers at a material saving in the cost of operation. The sprinkling district in 1913 was 10 per cent. larger than it was in 1912, and yet after paying operating expenses and \$2000 on the purchase price of the sprinkler and interest on the unpaid portion, there was a saving of more than \$1000. The sprinkling of 1912 cost \$4659, but the sprinkling of the same district in 1913 cost only \$3300, making a saving of \$1359.

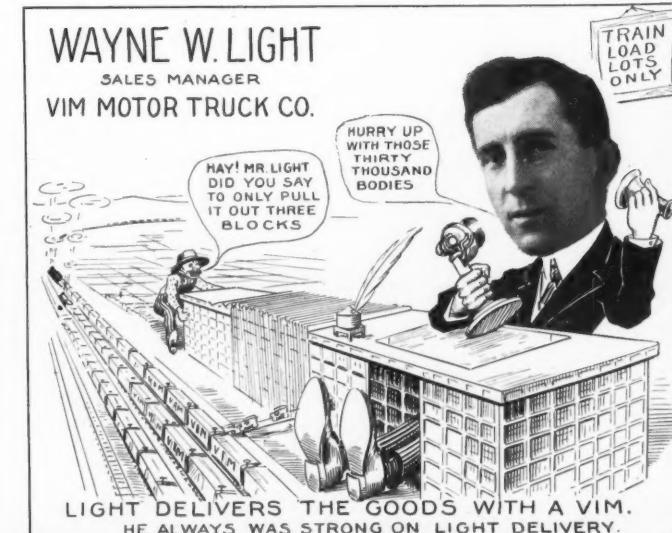
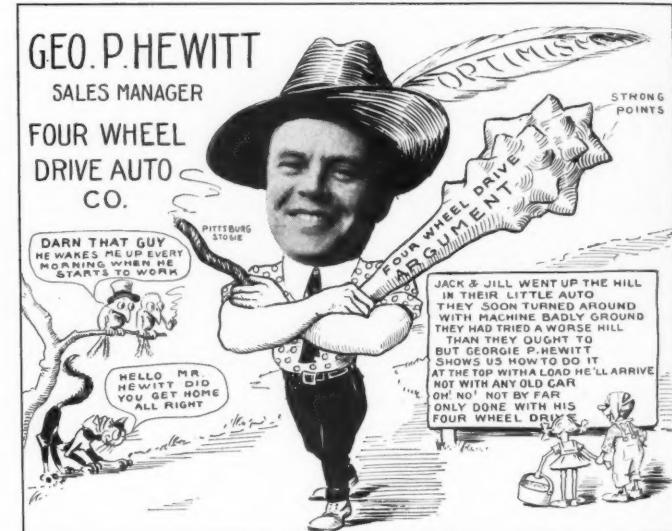
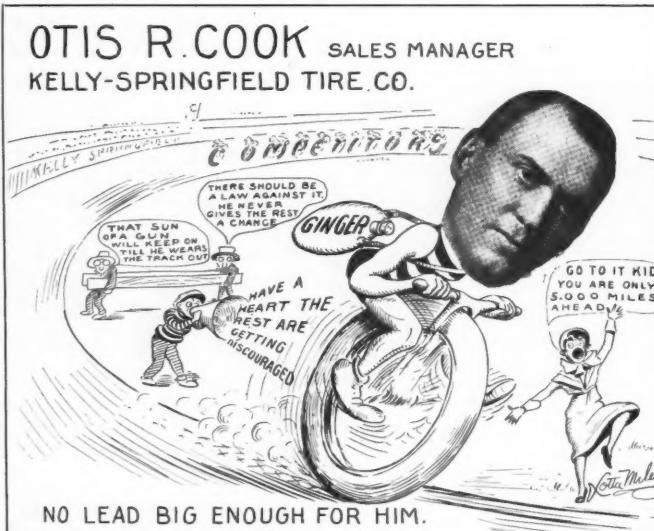
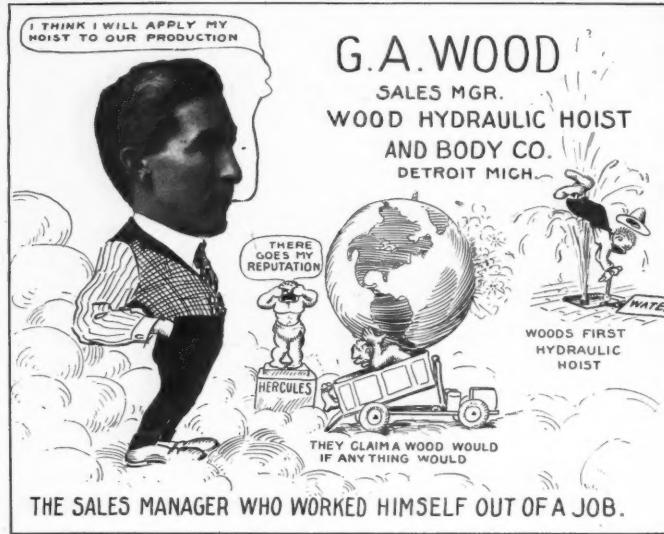
Studebaker Corp. will redeem on March 1st all its remaining 5 per cent. serial notes amounting to \$2,308,500.



Battery A, National Guard of California, Entering San Diego on a Demonstration Run From Los Angeles

The Battery of four guns and caissons and sixty men was transported in four Moreland trucks from Los Angeles to San Diego and return, 268 miles. The demonstration took place without a hitch and with notable efficiency and economy.

CCJ GALLERY of SALES MANAGERS



Annual Commercial Car Review

(Western Makers' Section)

On the following pages is given a complete review of the Commercial Car Models which will be manufactured for the coming season by Western American Manufacturers.

See Complete Indexes on Pages 42 and 43

THIS is the second or Western Section and contains a review of cars made in the following States: California, Illinois, Indiana, Iowa, Michigan, Minnesota, Missouri, Oregon, Texas, Washington and Wisconsin.

The first or Eastern Section of the Review, was published in January, and included cars manufactured in the following States: Connecticut, Delaware, District of Columbia, Georgia, Kentucky, Maryland, Massachusetts, New York, New Hampshire, New Jersey, North Carolina, Ohio and Pennsylvania.

The data given in this Review was supplied direct by the makers, and is as correct as can be obtained up to the date of publication.

Key to Abbreviations will be found on the leaf attached to this page; when this is opened out it will be found very convenient to refer to, no matter which pages of the Review are consulted. Indexes will be found on pages 42 and 43.

Criticisms and Suggestions on this Buyers' Information Review are invited. We want to know whether it meets requirements and how it can be made better, if possible.

Horse Power.---All horse powers are calculated by the S. A. E. formula: $H. P. = \frac{D^3 N}{2.5}$, where D=bore in inches and N=number of cylinders.

On the other side of this leaf will be found the key to the abbreviations used in the

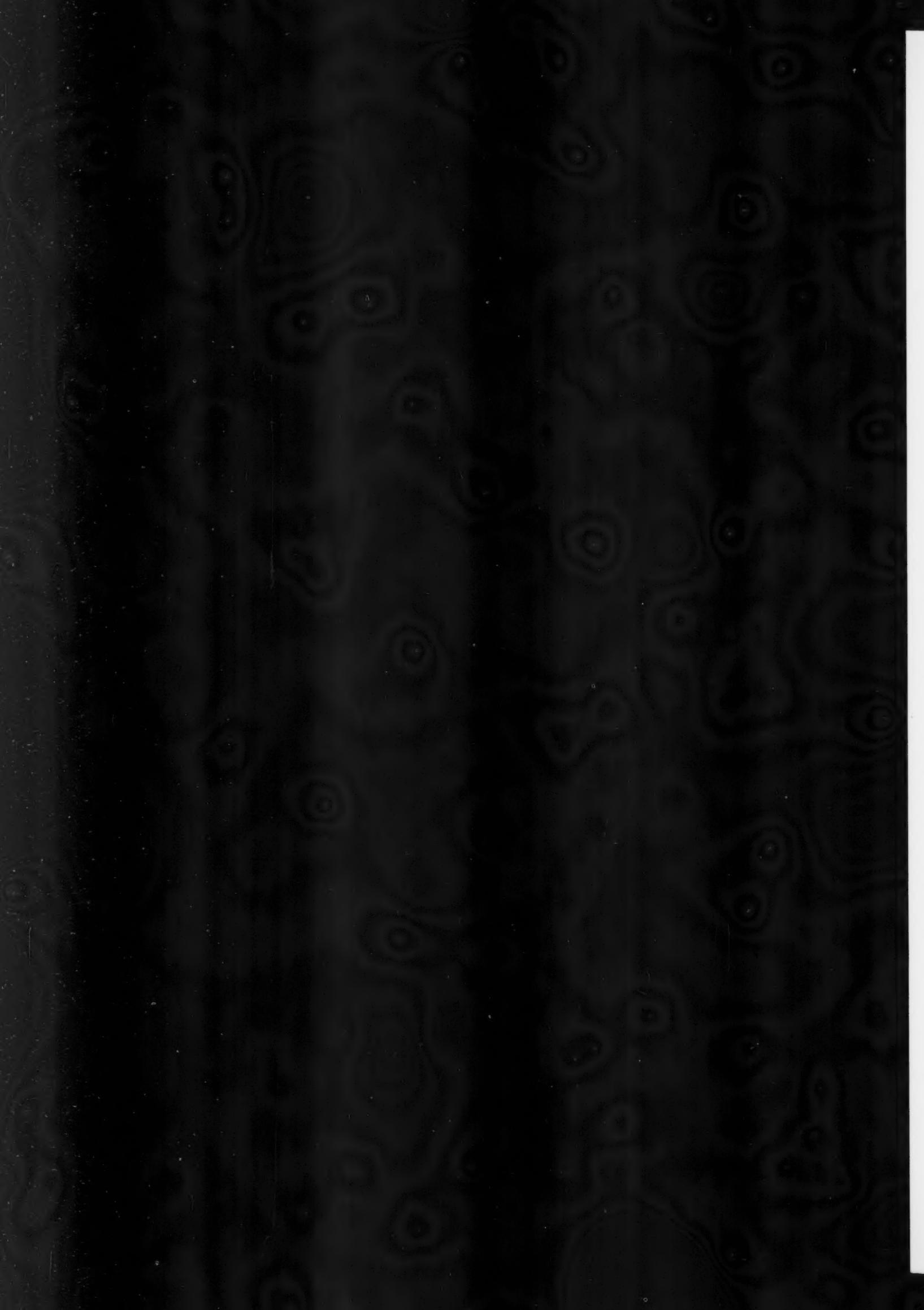
Annual Commercial Car Review

(Western Makers' Section)

While consulting the Review, turn this leaf out so that it extends beyond the book, it will then be convenient for reference, no matter how many pages you turn to.

Indexes arranged alphabetically and according to price are on pages 42 and 43.





KEY OF ABBREVIATIONS

USED IN THE

Annual Commercial Car Review

Chassis Weight: Given in pounds and includes weight of chassis only.

Price: In the table the prices are for chassis only. In the captions, the prices are for the car complete with body as shown in the illustration, unless otherwise stated.

Bodies: Gives the styles of bodies carried as standard stock. Bodies other than those indicated can usually be had on order. Prices of these bodies, where obtainable, are given in the captions under the illustrations. P, panel; S, stake; FB, Flareboard; C, canopy top; E, express; D, power dump; SS, screen side.

Load Platform Height: In inches.

Maximum Speed: In miles per hour.

Horse Power: Calculated by the S. A. E. formula, 4-cycle H. P. = $\frac{D^2 N}{2.5}$; D = bore in inches, N = number of cylinders.

Cylinders Cast: 1, singly; 2, pairs; 4, in fours; 6, in sixes.

Cooling: T, thermo-syphon; G, gear pump; C, centrifugal pump; A, air; W, water.

Radiator: H, honeycomb; T, tubular; C, cellular; V, vertical.

Carburetor: B, Breeze; C, Carter; F, Flechter; FR, French; H, Holley; J, Johnson; K, Kingston; L, Long; M, Marvel; ME, Mea; MS, Master; MU, Muir; MY, Mayer; O, optional; R, Rayfield; SB, Stromberg; SH, Shakespeare; SL, Schebler; SP, special; SU, S. U.; T, Tillotson; Z, Zenith; ZP, Zephyr.

Ignition: A, Atwater Kent; B, Bosch; BL, Berling; BR, Briggs; BT, Battery; C, Connecticut; D, Delco; E, Eisemann; H, Heinze; M, Mea; MG, Magneto; N, National; R, Remy; SD, Splitdorf; U, U. & H.; W, Western Electric; WS, Westinghouse.

Spark Plug Size: S, S.A.E.; $\frac{1}{2}$, $\frac{1}{2}$ in. pipe; M, Metric.

Lubrication: S, splash; F, force-feed; G, gravity.

Clutch: B, band; C, cone; D, disc; U, control unit.

Drive: B, bevel gear; C, chain; W, worm; IG, internal gear; R, roller; S, shaft; SP, spur.

Transmission: S, selective; P, progressive; L, planetary; F, friction; IC, individual clutch; E, electric; U, control unit.

Type Rear Axle: D, dead; F, floating; S, semi-floating; $\frac{3}{4}$, $\frac{3}{4}$ floating.

Tires: Solid unless otherwise indicated—*, pneumatic; D, dual; T, Triple; S, steel.

Steering Wheel: R, right; L, left; C, center; O, optional.

Control Levers: R, right, L, left; C, center; O, optional.

Wheelbase: In inches.

Engine Starter: A, Apelco; AL, Auto Lite; B, Bosch; BJ, Bijur; D, Delco; DS, Disco; EZ, Entz, GD, Gray & Davis; J, Jesco; R, Remy; U, U. S. L.; WG, Wagner; WS, Westinghouse; X, extra.

ADDITIONAL ABBREVIATIONS USED ON ELECTRICS

Motor: C, compound; F, four-pole; S, series; W, Westinghouse.

Controller: B, barrel; C, continuous torque; CH, Cutler-Hammer; D, drum; F, flat; G, General Electric; M, magnetic; W, Westinghouse.

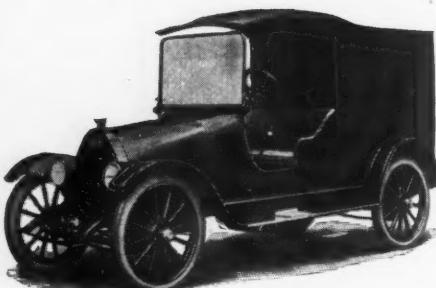
Drive: BD, balance drive.

ADDITIONAL ABBREVIATIONS USED ON INDUSTRIAL TRUCKS

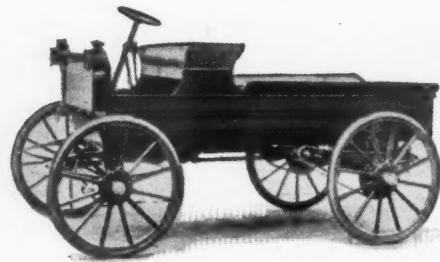
Steering Type: 4, 4-wheel.

Wheels: S, steel.

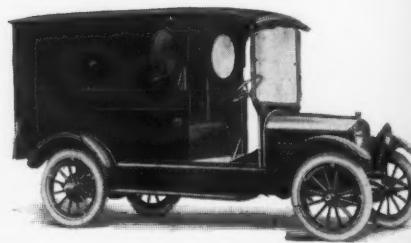
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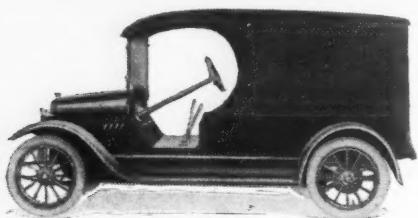
Packet 600-lb. Panel, \$450.
Also Stake, \$450; Flareboard, \$450.



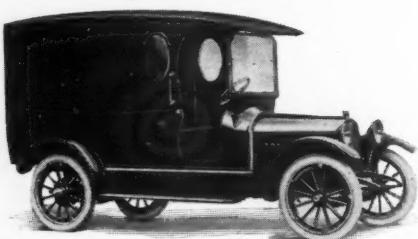
Mercury Model P-1, 1000-lb. Flareboard, \$750.
Also P-1 Stake, \$750; P-2 Panel, \$850; P-3 Panel, \$890; P-4, \$900; P-3 Panel, \$800; P-2 Panel, \$800.



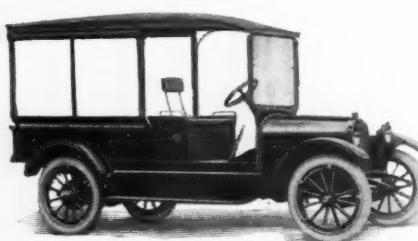
Detroit 1000-lb. Package Wagon, Panel, \$695.
Also De Luxe Panel, \$710; Covered Express, \$685.
Above prices are without starter, which is \$55 extra.



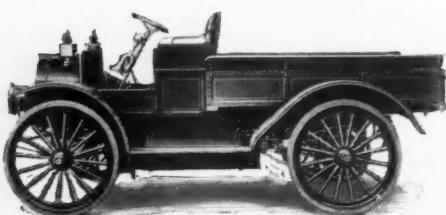
Briscoe Model 24, 750-lb. Panel.
Also Open Express, \$585.



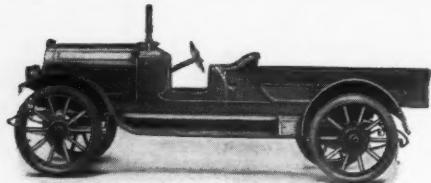
Detroit 1000-lb. De Luxe Panel Package Wagon, \$710.
Also Panel, \$695; Covered Express, \$685.
Above prices are without starter, which is \$55 extra.



Detroit 1000-lb. Covered Express, \$685.
Also Panel, \$695; De Luxe Panel, \$710.
Above prices are without starter, which is \$55 extra.



International Model MA, 1000-lb. Express, \$600.
Also Stake, \$600.
Made by International Harvester Corp.



Dispatch Model N, 1200-lb. Convertible, \$900-\$1100.
Also Panel, \$950-\$1100; Panel, \$980; Flareboard, \$950.

Model	Chassis Weight	Chassis Price	Styles of Stock Bodies Furnished	Height of Loading Platform	Maximum Speed	Horse Power	Cylinders	Bore	Stroke	Cylinders Cast	How Cooled	Radiator
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Packet Motor Truck Co., Minneapolis, Minn.
425 P, S, FB 21 30 12 4 2.75 4 4 T T

750 Pound Gasoline

Briscoe Motor Co., Inc., Jackson, Mich.
C, FB, P 45 16 4 3.12 5.12 4 T T
Dart Motor Truck Co., Waterloo, Ia.
675 P 30 17 4 3.25 4 4 T H
Willys-Overland Co., Toledo, Ohio.
1600 P 27 40 16 4 3.12 5 4 T C

800 Pound Gasoline

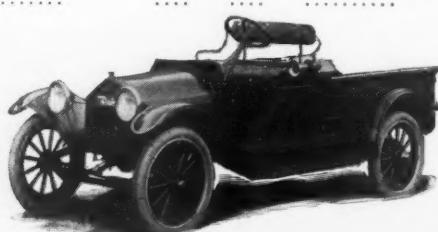
Willys-Overland Co., Toledo, Ohio.
P 35 40 27 4 4.12 4.5 4 T C

1000 Pound Gasoline

Bauer Machine Works Co., Kansas City, Mo.
2300 720 P, FB 34 30 23 4 3.75 5 4 C T
Detroit Commercial Car Co., Pontiac, Mich.
1075 P, FB 30 17 4 3.75 4.25 4 T C
Dart Motor Truck Co., Waterloo, Ia.
2000 845 P 24 16 4 3.12 4.5 4 T H
International Harvester Corp., Chicago, Ill.
2200 600 S, E 35 20 20 2 5 5 1 A A
2200 600 S, E 38 20 20 2 5 5 1 A A
2200 650 S, E 35 20 20 2 5 5 1 A A
2200 710 S, E 35 16 16 2 4.5 5 1 C C
2200 710 S, E 38 16 16 2 4.5 5 1 C C
2200 760 S, E 35 16 16 2 4.5 5 1 C C
Kissel Motor Car Co., Hartford, Wis.
2500 950 P 32 25 24 4 3.87 5.5 4 C T
Kosmath Co., Detroit, Mich.
1600 675 P, S, FB 30 30 16 4 3.12 4.5 4 W V
Mercury Mfg. Co., Chicago, Ill.
1500 650 P, S, FB 38 14 2 4.25 4 1 A ..
Studebaker Corp., Detroit, Mich.
4-40 2050 785 P, FB, E 31 24 4 3.87 5 4 C T
H. E. Wilcox Motor Co., Minneapolis, Minn.
T 2500 1000 P, S, FB 31 20 20 4 3.5 5 4 T T

1200 Pound Gasoline

Dispatch Motor Car Co., Minneapolis, Minn.
2100 900 P, FB 30 25 23 4 3.75 5 4 T H
Falcon Motor Truck Co., Detroit, Mich.
P 30 14 4 3 4 4 T ..



Dart Model D, 750-lb. Flareboard, Chassis, \$675.



Mercury Model P-3, 1000-lb. Panel, \$800.
Also Model P-2, 1000-lb. Panel, \$800; P-1, 1000-lb. Flareboard, \$750; P-1 Stake, \$750; P-2 Panel, \$850; P-3 Panel, \$890; P-4, \$900.



Bauer Model A, 1000-lb. Flareboard, \$840.
Also Panel, \$880.

BODY DETAILS OF CARS NOT ILLUSTRATED
Studebaker Model 4-40, 1000-lb. Panel, \$875.
Also Flareboard, \$850; Depot Bus, \$875.



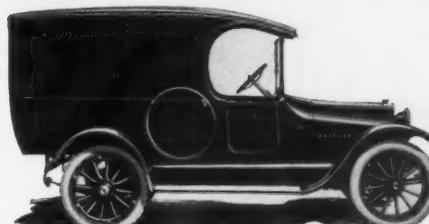
Kosmath Model 15, 1000-lb. Panel, \$750.
Also Stake, \$725; Flareboard, \$725.



Studebaker Model S-F, 1000-lb. Covered Express, \$850.
Also Panel, \$875; Flareboard, \$850.



Dart Model A, 1000-lb. Flareboard, Chassis, \$845.
Also Panel, \$875.



Studebaker Model S-F, 1000-lb. Panel, \$875.
Also Flareboard, \$850; Covered Flareboard, \$850.

Commercial Cars

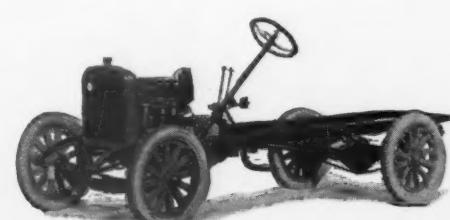
Ignition	Spark-Plug Size	Lubrication	Clutch	Drive	Transmission	Speeds Forward	Type Rear Axle	Front Tires	Rear Tires	Steering Wheel	Brake and Gear Levers	Wheelbase	Engine Starter	% Total Weight on Rear Wheels
..	1/2	SF	Packet Motor Truck Co.,	C	F	3	D	28x3*	28x3*	L	L	100	X	60
Y	R	S	SF	Briscoe Motor Co., Inc.,	Jackson, Mich.	C	B	3	F	30x3 1/2*	30x3 1/2*	L	C	104
C	..	S	SF	Dart Motor Truck Co.,	Waterloo, Ia.	D	B	3	F	30x3 1/2*	30x3 1/2*	L	C	106
SD	1/2	SF	Willys-Overland Co.,	Toledo, Ohio.	C	B	S	3	3 1/4	31x4*	31x4*	L	C	104

Commercial Cars

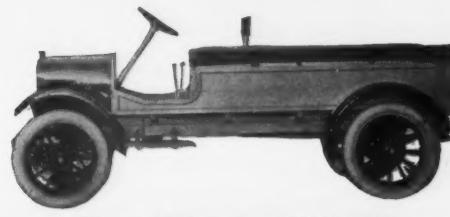
SD	1/2	SF	Willys-Overland Co., Toledo, Ohio.	C	B	S	3	3 1/4	33x4*	33x4*	L	C	106	AL	70
Commercial Cars															
Bauer Machine Works Co., Kansas City, Mo.															
Detroit Commercial Car Co., Pontiac, Mich.															
Dart Motor Truck Co., Waterloo, Ia.															
International Harvester Corp., Chicago, Ill.															
Kissel Motor Car Co., Hartford, Wis.															
Kosmath Co., Detroit, Mich.															
Mercury Mfg. Co., Chicago, Ill.															
Studebaker Corp., Detroit, Mich.															
H. E. Wilcox Motor Co., Minneapolis, Minn.															

Commercial Cars

B	1/2	F	Dispatch Motor Car Co., Minneapolis, Minn.	U	C	U	4	D	36x3 1/2*	36x3 1/2*	R	R	120	U	34
A	Falcon Motor Truck Co., Detroit, Mich.	C	B	S	3	F	31x4*	31x4*	..	C	106	..	..



Kissel Kar 1000-lb. Chassis, \$950.



Falcon 1200-lb. Flareboard, \$750.

International Model M, 1000-lb. Covered Flareboard, \$710.

Also Express, \$710.

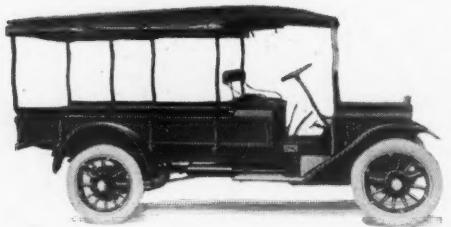
Made by International Harvester Corp.



Mercury Model P-1, 1000-lb. Stake, \$750.
Also P-1 Flareboard, \$750; P-2 Panel, \$850; P-3 Panel, \$890; P-4, \$900; P-3 Panel, \$800; P-2 Panel, \$800.



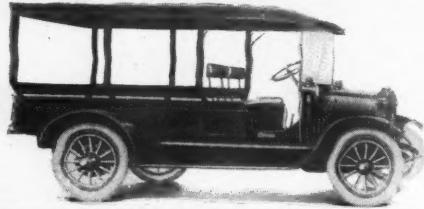
Little Giant Model 15, 1500-lb. Chassis, \$1500.
Also Panel, \$1700; Stake, \$1600; Flareboard, \$1550.
Made by Chicago Pneumatic Tool Co.



GMC Model 15, 1500-lb. Covered Flareboard, Chassis, \$1090.
Also Flareboard, with 6-post Canopy Top, \$1205;
Flareboard, \$1165.
Made by General Motors Truck Co.



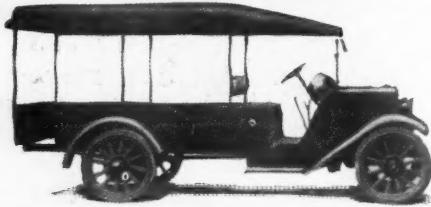
Lincoln 1500-lb. Panel, \$1025.
Also Stake, \$985; Flareboard, \$985.



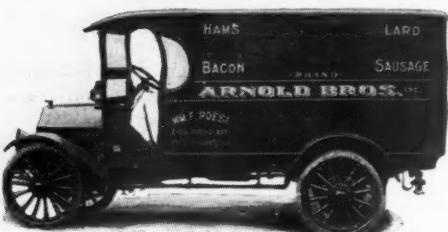
Commerce Model NH, 1500-lb. Covered Flareboard, \$975.
Also Panel, \$975; Stake, \$975; Flareboard, \$975.



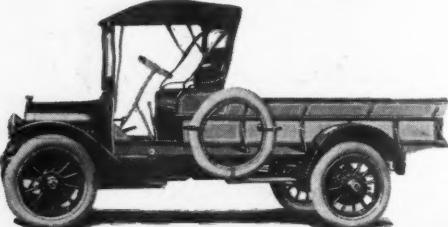
Dart Model BB, 1500-lb. Chassis, \$1300.



Denby Model U, 1500-lb. Covered Flareboard, \$690.
Also Flareboard.



Available 1-ton Panel.



Buick Model D-4, 1-ton Flareboard, \$1225.



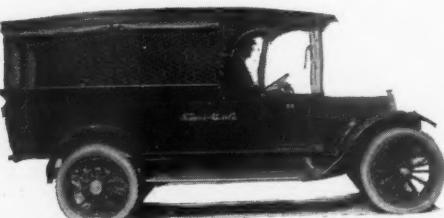
Fargo Model K, 1500-lb. Panel, Chassis, \$950.
Also Panel, \$1100; Stake, \$1000; Flareboard, \$1000.

Model	Chassis Weight	Chassis Price	Styles of Stock Bodies Furnished	Height of Loading Platform	Maximum Speed	Horse Power	Cylinders	Bore	Stroke	Cylinders Cast	How Cooled	Radius of Turn	Curb Weight
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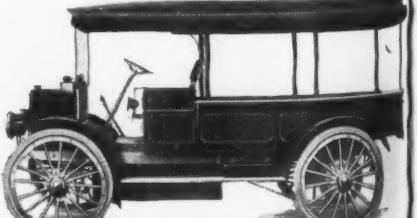
B	2500	840 P, FB	Bauer Machine Works Co., Kansas City, Mo.	34 30 23 4	3.75	5	4	C	T				
			Bollstrom Products Sales Co., Battle Creek, Mich.										
A	2900	1200		29 20 16 4	3.12	5.25	2	C	C				
A	2900	1200		29 20 16 4	3.12	5.25	2	C	C				
A	2900	1200		29 20 16 4	3.12	5.25	2	C	C				
V-2	2600	1100 P, S, FB	Buckeye Mfg. Co., Anderson, Ind.	34 20 25 4	3.75	4.25	4	G	T	SL			
			Chicago Pneumatic Tool Co., Chicago, Ill.										
15	3000	1500 P, S, FB	Commerce Motor Car Co., Detroit, Mich.	28 30 20 4	3.5	5	4	T	T	SL			
N	2200	875 P, S, FB	Dorris Motor Car Co., St. Louis, Mo.	25 20 4	3.5	5	4	T	T	B			
IA4	2800	1900	Denby Motor Truck Co., Detroit, Mich.	31 4	4.37	5	2	C	C	SB			
IA4	2800	1900		31 4	4.37	5	2	C	C	SB			
U	2850	800 P, FB	Dart Motor Truck Co., Waterloo, Ia.	27 20 16 4	3.12	4	4	T	T				
BB	...	1300	Diamond T Motor Car Co., Chicago, Ill.	21 20 4	3.5	5.12	4	T	H	SB			
3/4-JA	3000	1175	Fargo Motor Car Co., Chicago, Ill.	20 23 4	3.5	5	4	T	T	R			
K	2975	950 P, S, FB	General Motors Truck Co., Pontiac, Mich.	35 20 20 4	3.5	5	4	T	T	R			
15	2385	1090 FB, C	Hewitt-Ludlow Auto Co., San Francisco, Cal.	30 20 20 4	3.5	5	4	C	T	M			
		1650	Independent Motors Co., Port Huron, Mich.	20 4	3.5	5.12	4	T	H	SB			
F	2750	1285	International Harvester Corp., Chicago, Ill.	37 18 20 4	3.5	5	4	T	T	M			
E	2550	950 E	Thomas B. Jeffery Co., Kenosha, Wis.	36 16 16 2	4.5	5	1	C	T	H			
E	2550	1000 E		36 16 16 2	4.5	5	1	C	T	H			
1516	...	900	Myers Machine Co., Sheboygan, Wis.	25 23 4	3.75	5.25	4	C	H	SB			
A	3000	1500 P, S, FB	D. F. Poyer Co., Menominee, Mich.	36 20 20 4	3.5	5.25	4	C	H				
EW	3100	1295 S, FB	Republic Motor Truck Co., Alma, Mich.	38 25 23 4	3.75	5	4	T	T	SB			
F	2850	P, S, FB	Red Motor Truck Co., Lansing, Mich.	39 18 20 4	3.5	5	4	T	T	SB			
F	2850	P, S, FB		39 18 20 4	3.5	5	4	T	T	SB			
F	2550	1000 E	Sterling Motor Truck Co., Milwaukee, Wis.	33 22 27 4	4.12	4.5	2	C	T	J			
		2100	895 P, FB, C	35 16 4	3.12	4.5	4	T	T	SL			
28	2650	1425	South Bend Motor Car Works, South Bend, Ind.	31 25 23 4	3.75	5	4	T	U	SB			
		2600	Tower Motor Truck Co., Greenville, Mich.	36 20 20 4	3.5	5	4	T	H	SB			
W	...	1050	H. E. Wilcox Motor Co., Minneapolis, Minn.	36 20 20 4	3.5	5	4	T	V				
		1200 P, S, FB		27 20 20 4	3.5	5	4	T	V				

1 Ton Gasoline

1	3000	...	Available Truck Co., Chicago, Ill.	34 18 23 4	3.75	5	4	T	T	SB			
D-4	3980	1150 FB	Buick Motor Co., Flint, Mich.	30 23 4	3.75	5	2	C	T	M			
CFL	3400	1550	Continental Motor Truck Co., Chicago, Ill.	25 23 4	3.75	5.25	2	C	T	SB			
Horner	4200	2000	Detroit-Wyandotte Motor Truck Co., Wyandotte, Mich.	35 19 27 4	4.12	5.25	4	C	T	SB			
Horner	4200	2000		35 19 27 4	4.12	5.25	4	C	T	SB			



Dorris Model IA4, 1500-lb. Screen Side, Chassis, \$1900.



International Model E, 1500-lb. Express, \$950.
Made by International Harvester Corp.



Wilcox Model W, 1500-lb. Milk Body, Chassis, \$1200. Also Panel, \$1450; Stake, \$1325; Flareboard, \$1300.



Sterling 1500-lb. Panel, Chassis, \$895. Also Panel, \$1030; Flareboard, \$975; Covered Flareboard, \$1005; Full Panel, \$1095.



Lincoln 1500-lb. Chassis, \$925. Also Panel, \$1025; Stake; Flareboard, \$985.



Independent Model F, 1500-lb. Covered Flareboard, Chassis, \$1285.



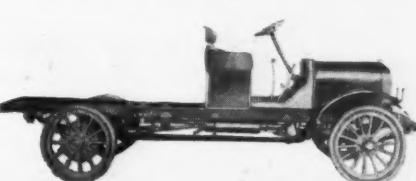
Republic Model F, 1500-lb. Flareboard, \$995. Also Panel, \$995.



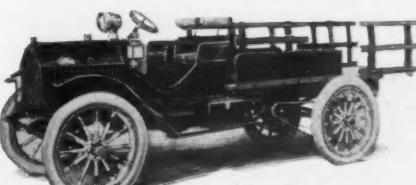
Denby Model B, 1-ton Mail Car, Chassis, \$1475. Also Panel, \$1710; Stake, \$1590; Flareboard, \$1475.



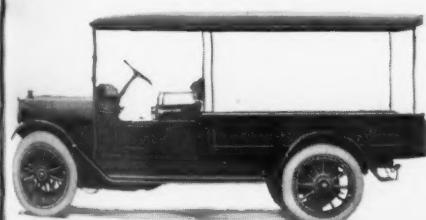
Horner 1-ton Screen Side, Chassis, \$2000. Made by Detroit-Wyandotte Motor Truck Co.



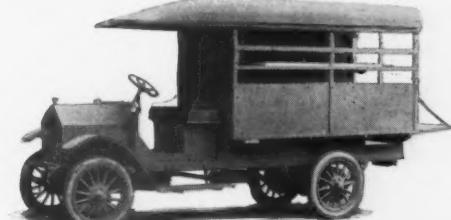
Menominee Model E-W, 1500-lb. Chassis, \$1295. Also Stake, \$1395; Flareboard, \$1370. Made by D. F. Poyer Co.



Lambert Model V-2, 1500-lb. Stake, \$1250. Also Panel, \$1300; Flareboard, \$1250. Made by Buckeye Mfg. Co.



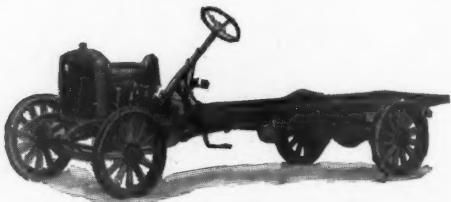
Reo Model F, 1500-lb. Covered Express, \$1075. Also Covered Express, \$1050.



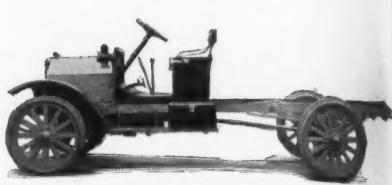
South Bend Model 28, 1500-lb. Covered Express, Chassis, \$1425.



Hewitt-Ludlow, 1-ton Special Body, Chassis, \$1800.



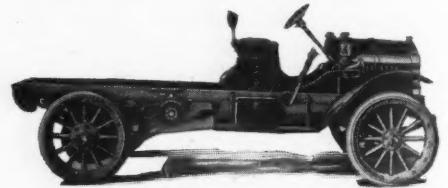
Kissel Kar 1-ton Chassis, \$1250.



Landshaft Model GI, 1-ton Chassis, \$1250.



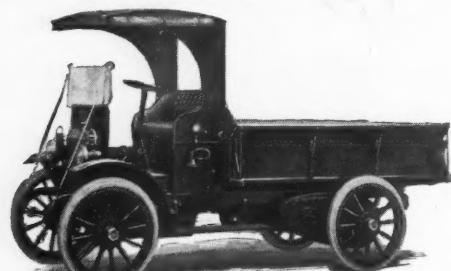
International Model F, 1-ton Express, \$1550.
Made by International Motor Co.



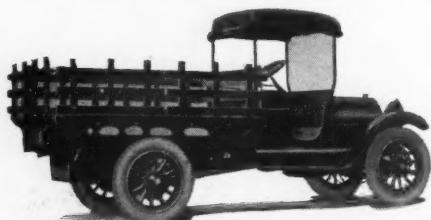
Lambert Model V-3, 1 ton Chassis, \$1500.
Also Panel, \$1750; Stake, \$1700; Flareboard, \$1700.
Made by Buckeye Mfg. Co.



Diamond T, Model J-1, 1-ton Panel, Chassis, \$2000.



Natco 1-ton Flareboard, Chassis, \$1925.
Made by National Motor Truck Co.



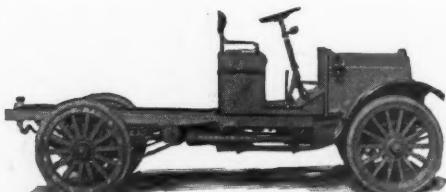
Studebaker 1-ton Stake, \$1250.
Also Express, \$1200.

BODY DETAILS OF CARS NOT ILLUSTRATED
Packard Model D, 1-ton Stake, \$2320.
Wilcox Model S, 1-ton Panel, \$1900.
Also Stake, \$1725; Flareboard, \$1725.

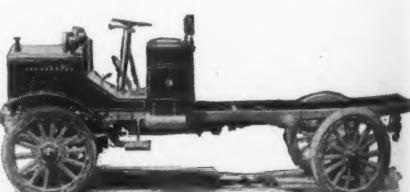
Model	Chassis Weight	Chassis Price	Styles of Stock Bodies Furnished	Height of Loading Platform	Maximum Speed	Horse Power	Cylinders	Bore	Stroke	How Cooled	Radius of Curv.	Carburetor	
V-3	4000		Buckeye Mfg. Co., Anderson, Ind.	34	15	35	4	4.06	4.5	4	G	T	
B	3200		1500 P, S, FB Denby Motor Truck Co., Detroit, Mich.	32	18	20	4	3.5	5	4	T	T	
B	....		1475 P, S, FB Dart Motor Truck Co., Waterloo, Ia.	21	20	4	3.5	5.12	4	T	H	SB	
JB	3200		1400 Diamond T Motor Car Co., Chicago, Ill.	18	23	4	3.5	5	4	T	T	R	
L	3400		1485 Fargo Motor Car Co., Chicago, Ill.	37	18	23	4	3.75	5	4	T	T	R
....	....		1175 P, S, FB Hewitt-Ludlow Auto Co., San Francisco, Cal.	20	4	3.5	5.12	4	T	H	SB		
F	3150		1800 International Harvester Corp., Chicago, Ill.	15	20	4	3.5	5.25	4	C	T	SB	
F	3150		1500 E Thomas B. Jeffery Co., Kenosha, Wis.	34	16	20	4	3.5	5.25	4	C	T	H
2016	....		1400 Kissel Motor Car Co., Hartford, Wis.	32	20	24	4	3.87	5.5	4	C	T	SB
....	3200		1250 Wm. Landshaft & Sons, Chicago, Ill.	36	18	20	4	3.5	5.12	4	T	H	RR
GI	2800		1250 Lincoln Motor Truck Co., Detroit, Mich.	36	18	20	4	3.5	5.12	4	T	H	R
GI	2800		925 P, S, FB Myers Machine Co., Sheboygan, Wis.	28	24	23	4	3.75	5	4	T	T	SB
B	3500		1650 P, S, FB Moreland Motor Truck Co., Los Angeles, Cal.	36	15	20	4	3.5	5.25	4	C	H	SB
I	3200		1650 National Motor Truck Co., Bay City, Mich.	34	20	23	4	3.75	5	4	W	T	MS
....	2700		1925 Packard Motor Car Co., Detroit, Mich.	30	20	20	4	3.5	5	4	T	C	Z
ID	4316		2200 S D. F. Poyer Co., Menominee, Mich.	43	16	26	4	4	5.5	4	C	B	..
ID	4316		2200 S 1575 S, FB	43	16	26	4	4	5.5	4	C	C	SB
FW	3785		1575 S, FB 1575 S, FB	40	16	23	4	3.75	5.25	4	C	T	SB
FW	3785		1575 S, FB 1575 S, FB	40	16	23	4	3.75	5.25	4	C	C	SB
E	3000		1275 S, FB 1275 S, FB	39	15	23	4	3.75	5	4	T	T	SB
E	3000		1275 S, FB 1275 S, FB	39	15	23	4	3.75	5	4	T	T	SB
120	3000		1375 Service Motor Truck Co., Wabash, Ind.	32	20	20	4	3.5	5.5	4	T	T	SB
....	2500		1150 S, E Studebaker Corp., Detroit, Mich.	42	20	24	4	3.87	5	4	C	T	SL
IW	3150		1600 Sandow Truck Co., Chicago, Ill.	36	20	23	4	3.75	5.25	4	W	H	SB
F	3400		1550 Signal Motor Truck Co., Detroit, Mich.	15	23	4	3.75	5.25	4	C	H	SB	
F	3400		1550 1550	15	23	4	3.75	5.25	4	C	C	SB	
A	3025		1650 Wichita Falls Motor Co., Wichita Falls, Texas.	40	15	17	4	3.25	5	4	T	C	SB
K	3500		1650 1650	42	15	20	4	3.5	5	4	T	C	SB
S	2800		1600 P, S, FB H. E. Wilcox Motor Co., Minneapolis, Minn.	30	18	23	4	3.75	5	4	T	T	SB
1-SB	3020		1500 Zeitler & Lamson Truck Co., Inc., Chicago, Ill.	42	20	4	3.5	5.12	4	T	C	SB	
1-TC	3200		1600 1600	42	23	4	3.75	5.25	4	C	C	SB	

1 1/2 Ton Gasoline

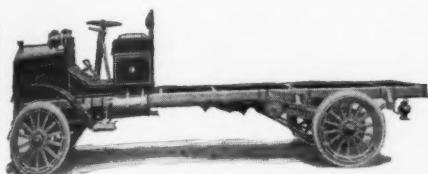
Acme Motor Truck Co., Detroit, Mich.	1900	34	14	26	4	4	4.5	2	C	C	L	
Chicago Pneumatic Tool Co., Chicago, Ill.	1900	34	14	26	4	4	4.5	2	C	C	SL	
H-3	3200	1450 P, S, FB	29	18	20	4	3.5	5.12	4	T	T	
CHL	5400	1750	25	23	4	3.75	5.25	2	C	T	SE	
Horner	4320	2250	37	17	27	4	4.12	5.25	4	C	T	SE
Horner	4320	2250	37	17	27	4	4.12	5.25	4	C	T	SE
D	3900	1685 P, S, FB	33	15	23	4	3.75	5	4	T	T	..
J-2	3700	2050	16	30	4	4.12	5.25	4	C	H	RR	
J-2	....	....	16	30	4	4.12	5.25	4	C	C	RR



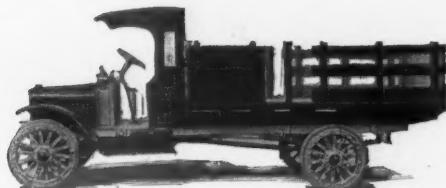
Dart Model B, 1-ton Chassis, \$1400.



Wichita Model K, 1-ton Chassis, \$1650.



Wichita Model A, 1-ton Chassis, \$1650.

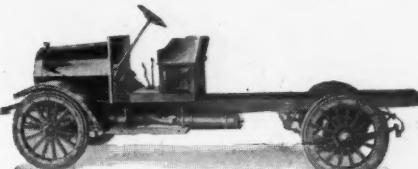


Republic Model E, 1-ton Stake, \$1275.



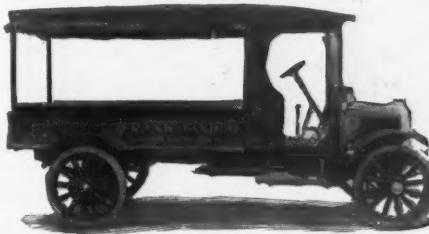
Little Giant Model H-3, 1/2-ton Chassis, \$1450. Also Panel, \$1650; Stake, \$1550; Flareboard, \$1500.

Made by Chicago Pneumatic Tool Co.



Wisconsin Model B, 1-ton Chassis, \$1650. Also Panel, \$1825; Stake, \$1750; Flareboard, \$1750.

Made by Myers Machine Co.



Fargo Model L, 1-ton Covered Flareboard, \$1175. Also Panel, \$1375; Stake, \$1300; Flareboard, \$1300.



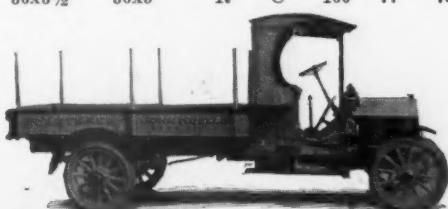
Signal Model F, 1-ton Covered Flareboard, \$1550.



Menominee Model F-W, 1-ton Chassis, \$1575. Also Stake, \$1700; Flareboard, \$1675. Made by D. F. Poyer Co.



Studebaker 1-ton Express, \$1200. Also Stake, \$1250.



Diamond T, Model J-2, 1 1/2-ton Sided Stake, Chassis, \$2250.



Denby Model D, 1 1/2-ton Stake, Chassis, \$1685. Also Panel, \$2015; Stake, \$1820; Flareboard, \$1805.



GMC Model 31, 1 1/2-ton Stake, Chassis, \$1900.
Made by General Motors Truck Co.



Federal Model M, 1 1/2-ton Special Panel, Chassis, \$1800.



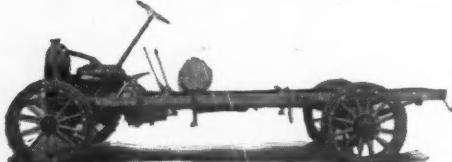
Federal Model M, 1 1/2-ton Special Stake, Chassis, \$1800.



Wilcox Model R, 1 1/2-ton Covered Flareboard, Chassis, \$1800.
Also Panel, \$2100; Stake, \$1950; Flareboard, \$1950.



Sandow Model 1 1/2W, 1 1/2-ton Panel, Chassis, \$1800.



Independent Model G, 1 1/2-ton Chassis, \$1800.



Fargo Model M, 1 1/2-ton Closed Body, Chassis, \$1375.
Also Panel, \$1625; Stake, \$1550; Flareboard, \$1550.



Mogul Model LM, 1 1/2-ton Covered Express, Chassis, \$1600.

BODY DETAILS OF CARS NOT ILLUSTRATED
Packard Model 1 1/2D, 1 1/2-ton Stake, \$2650.

1 1/2 Ton Gasoline

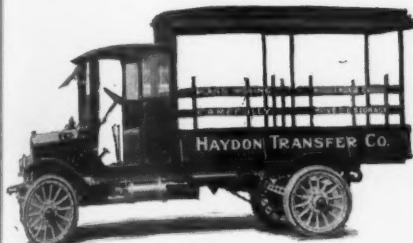
Model	Chassis Weight	Chassis Price	Styles of Stock Bodies Furnished	Height of Loading Platform	Maximum Speed	Horse Power	Cylinders	Bore	Stroke	Cylinders Cast	How Cooled	Radius of Turn	Carburetor
D-1 1/2	4350	1950	43	15	27	4	4.12	5.25	4	C	T	SB	
D-1 1/2	4350	1950	43	15	27	4	4.12	5.25	4	C	T	SB	
D-1 1/2	4350	1950	43	15	27	4	4.12	5.25	4	C	T	SB	
D-1 1/2	4350	1950	43	15	27	4	4.12	5.25	4	C	T	SB	
M	4000	1800	31	15	27	4	4.12	5.25	4	C	C	SB	
M	4000	1800	31	15	27	4	4.12	5.25	4	C	C	SB	
Fargo Motor Car Co., Chicago, Ill.													
M	3850	1375	P, S, FB	37	16	23	4	3.75	5	4	T	T	R
M	3850	1375	P, S, FB	37	16	23	4	3.75	5	4	T	T	R
General Motors Truck Co., Pontiac, Mich.													
31	4300	1900	P	31	15	23	4	3.75	5	4	C	T	M
31	4300	1900	P	31	15	23	4	3.75	5	4	C	T	M
Hewitt-Ludlow Auto Co., San Francisco, Cal.													
2250	.....	..	23	4	3.75	5.5	..	C	H	SB			
2150	.....	..	23	4	3.75	5.5	..	C	H	SB			
Independent Motors Co., Port Huron, Mich.													
G	3800	1800	43	15	27	4	4.12	5.25	4	C	C	M	
Kleiber & Co., Inc., San Francisco, Cal.													
I	4750	2250	32	18	27	4	4.12	5.25	4	C	T	SL	
Mogul Motor Truck Co., St. Louis, Mo.													
LM	4000	1600	31	18	23	4	3.75	5.25	4	C	H	C	
LM	4000	1600	31	18	23	4	3.75	5.25	4	C	H	C	
Moreland Motor Truck Co., Los Angeles, Cal.													
1 1/2	3500	1950	34	18	27	4	4.12	5.25	4	W	T		
Jos. W. Moon Buggy Co., St. Louis, Mo.													
B	3400	1650	S	36	18	32	4	3.75	5.25	4	C	C	SB
B	3400	1650	S	36	18	32	4	3.75	5.25	4	C	C	SB
Old Reliable Motor Truck Co., Chicago, Ill.													
4100	.....	30	16	23	4	3.75	5	4	C	H	SB		
Mais Motor Truck Co., Indianapolis, Ind.													
C	5000	2600	32	15	26	4	4	5.25	4	C	C	R	
D	5000	2600	32	15	26	4	4	5.25	4	C	C	R	
Packard Motor Car Co., Detroit, Mich.													
1 1/2D	4457	2500	S	43	16	26	4	4	5.5	4	C	H	..
1 1/2D	4457	2500	S	43	16	26	4	4	5.5	4	C	H	..
Pacific Metal Products Co., Torrance, Cal.													
4000	1950	34	18	27	4	4.12	5.25	4	C	T	MS		
Service Motor Truck Co., Wabash, Ind.													
130	4200	1950	33	14	27	4	4.12	5.5	4	C	T	SE	
Stegeman Motor Car Co., Milwaukee, Wis.													
4200	1900	..	18	25	6	3.25	4.5	6	C	H	SE		
South Bend Motor Car Works, South Bend, Ind.													
40	3900	1650	36	25	26	4	4	5	4	C	C	SE	
40	3900	1650	36	25	26	4	4	5	4	C	C	SE	
Sandow Truck Co., Chicago, Ill.													
1 1/2W	3420	1800	36	20	23	4	3.75	5.25	4	W	H	SE	
Signal Motor Truck Co., Detroit, Mich.													
H	3800	1750	..	15	23	4	3.75	5.25	4	C	H	SE	
United Motor Truck Co., Grand Rapids, Mich.													
ASW	3700	1800	31	18	23	4	3.75	5	4	C	H	SE	
G	.....	1950	..	15	23	4	3.75	5.25	4	C	V	..	
Velie Motor Vehicle Co., Moline, Ill.													
25	4050	2250	S, FB	36	16	27	4	4.12	5.25	4	C	T	..
25	4050	2250	S, FB	42	16	27	4	4.12	5.25	4	C	T	..
Viall Motor Car Co., Chicago, Ill.													
4000	1650	36	16	23	4	3.75	..	2	C	C	R	..	
4000	1650	36	16	23	4	3.75	..	2	C	C	R	..	
Wichita Falls Motor Co., Wichita Falls, Texas.													
L	3600	1800	42	15	20	4	3.5	5	4	T	C	..	
R	3000	1800	P, S, FB	32	16	29	4	4.25	5	2	C	V	..



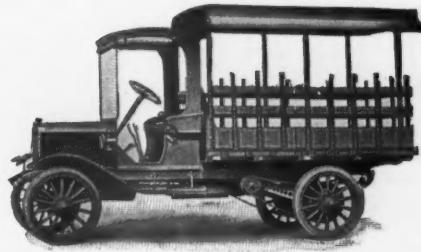
Federal Model M, 1 1/2-ton Flareboard, Chassis, \$1800.



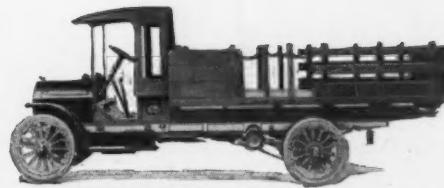
Federal Model M, 1 1/2-ton Express, Chassis, \$1800.



Moon Model B, 1 1/2-ton Covered Express, \$1950.



Moon Model B, 1 1/2-ton Covered Express, \$1900.



Republic Model D, 1 1/2-ton Stake, \$1475.



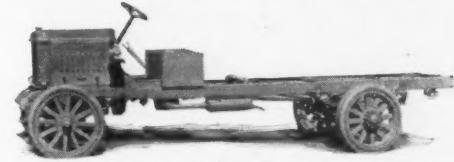
Service Model 130, 1 1/2-ton Side Door Provision Body, Chassis, \$1950.



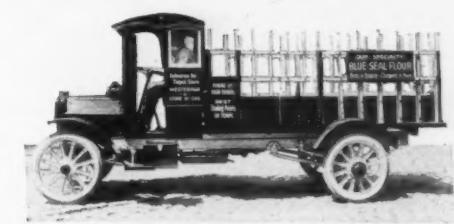
Stegeman 1 1/2-ton Tank Body, Chassis, \$1900.



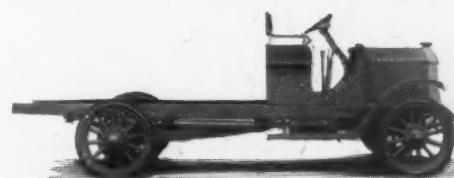
Old Reliable 1 1/2-ton Covered Flareboard, Chassis, \$1950.



Velle Model 25, 1 1/2-ton Chassis, \$2250. Also Stake, \$2375; Flareboard, \$2375.



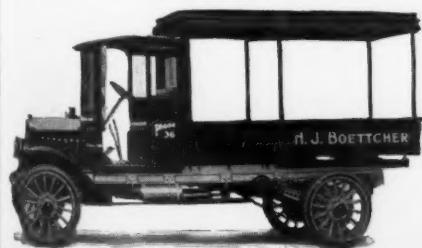
Federal Model M, 1 1/2-ton Stake, Chassis, \$1800.



Universal Model G, 1 1/2-ton Chassis, \$1950.



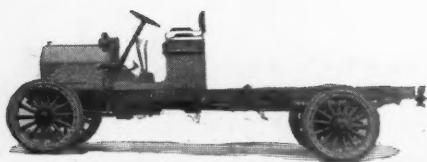
Wichita Model L, 1 1/2-ton Chassis, \$1800.



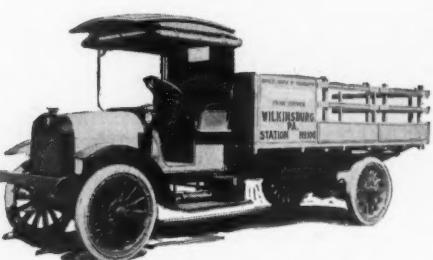
Moon Model B, 1 1/2-ton Covered Express, \$1950.



South Bend Model 40, 1 1/2-ton Chassis, \$1650.



Zeitler & Lamson Model 1 1/2 TC, 1 1/2-ton Chassis, \$1800.



Acme 2-ton Stake Sides, Chassis, \$2150. Made by Acme Motor Truck Co.

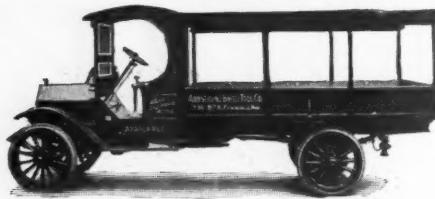


Fargo Model N, 2-ton Covered Flareboard Chassis, \$1575. Also Panel, \$1850; Stake, \$1750; Flareboard, \$1750.

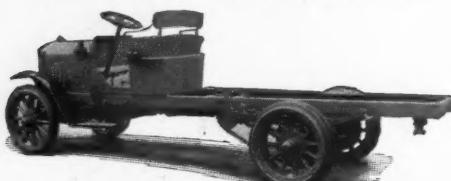
Hornet 2-ton Covered Stake, Chassis, \$2650. Made by Detroit-Wyandotte Motor Truck Co.



Columbia Model E, 2-ton Stake, Chassis, \$1650. Also Stake, \$1800.



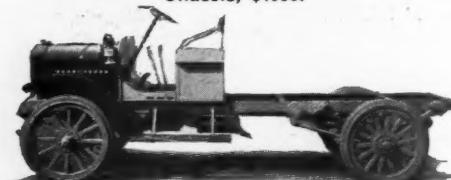
Available 2-ton Covered Flareboard.



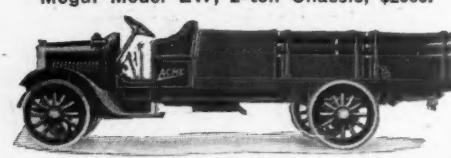
GMC Model 40, 2-ton Chassis, \$2375. Made by General Motors Truck Co.



Doris Model IAW, 2-ton Brewers' Body, Chassis, \$1990.



Mogul Model LW, 2-ton Chassis, \$2000.



Acme 2-ton Slat Side Stake, Chassis, \$2000. Made by Cadillac Auto Truck Co.

1 1/2 Ton Gasoline

Model	Chassis Weight	Chassis Price	Styles of Stock Bodies Furnished	Height of Loading Platform	Maximum Speed	Horse Power	Cylinders	Bore	Stroke	Cylinders Cast	How Cooled	Radius of Carburetor
.....	4500	1800	West Coast Wagon Co., Tacoma, Wash.	28	20	23	4	3.75	4.25	4	C	H
1 1/2-TC	3500	1800	Zeitler & Lamson Truck Co., Inc., Chicago, Ill.	44	..	23	4	3.75	5.25	4	CG	SB
1 1/2-SW	3600	1900	.....	44	..	26	4	4	5	4	CG	SB

2 Ton Gasoline

B	5450	Avery Co., Peoria, Ill.	.....	14	36	4	4.75	5	1	C	T	R		
2	4500	Acason Motor Truck Co., Detroit, Mich.	2500	P, S, FB	40	19	29	4	4.25	5.75	2	C	SL	
2	4200	Available Truck Co., Chicago, Ill.	.....	35	15	27	4	4.12	5.25	4	C	T	SB	
.....	.....	Acme Motor Truck Co., Detroit, Mich.	2150	.....	34	14	26	4	4	4.5	2	C	CL	
.....	.....	.....	2150	.....	34	14	26	4	4	4.5	2	C	CL	
16	4500	Chicago Pneumatic Tool Co., Chicago, Ill.	2500	P, S, FB	31	15	27	4	4.12	5.25	4	T	T	SL
Acme	4400	Cadillac Auto Truck Co., Cadillac, Mich.	2000	.....	33	17	27	4	4.12	5.25	4	C	T	R
CJ	6500	Continental Motor Truck Co., Chicago, Ill.	2100	.....	25	27	4	4.12	5.25	2	C	T	SB	
E	4100	Columbia Motor Truck & Trailer Co., Pontiac, Mich.	1650	S	43	15	27	4	4.12	5.5	4	C	T	SH
IAW	4800	Dorris Motor Car Co., St. Louis, Mo.	1990	.....	..	31	4	4.37	5	2	C	CB	SB	
IAW	4800	.....	1990	.....	..	31	4	4.37	5	2	C	CC	SB	
Horner	4580	Detroit-Wyandotte Motor Truck Co., Wyandotte, Mich.	2650	.....	38	15	27	4	4.12	5.25	4	C	T	SB
Horner	4580	.....	2650	.....	38	15	27	4	4.12	5.25	4	C	T	SB
E	4100	Denby Motor Truck Co., Detroit, Mich.	1985	P, S, FB	33	14	23	4	3.75	5	4	T	T	SL
C	4200	Dart Motor Truck Co., Waterloo, Ia.	1900	.....	..	17	27	4	4.12	5.5	4	C	H	SE
C	4200	.....	1900	.....	..	17	27	4	4.12	5.5	4	C	H	SE
C	5500	Duplex Power Car Co., Charlotte, Mich.	.....	39	12	27	4	4.12	5.5	4	C	V	SE	
C	5800	.....	.....	39	12	27	4	4.12	5.5	4	C	V	SE	
E	6500	.....	6500	.....	39	10	29	4	4.25	5.5	4	C	V	SE
E	6500	.....	6500	.....	39	10	29	4	4.25	5.5	4	C	V	SE
J-3	4200	Diamond T Motor Car Co., Chicago, Ill.	2200	.....	..	15	30	4	4.12	5.25	4	C	H	R
J-3	.....	.....	.....	..	15	30	4	4.12	5.25	4	C	H	R	
O	4300	Federal Motor Truck Co., Detroit, Mich.	2100	.....	31	15	27	4	4.12	5.25	4	C	C	C
O	4300	.....	2100	.....	31	15	27	4	4.12	5.25	4	C	C	C
O	.....	.....	.....	31	15	27	4	4.12	5.25	4	C	C	C	
O	.....	.....	31	15	27	4	4.12	5.25	4	C	C	C		
N	4200	Fargo Motor Car Co., Chicago, Ill.	1575	P, S, FB	39	15	27	4	4.12	5.5	4	C	T	T
N	4200	.....	1575	P, S, FB	39	15	27	4	4.12	5.5	4	C	T	T
40	4800	General Motors Truck Co., Pontiac, Mich.	2375	P	31	14	27	4	4.12	5.25	4	C	T	T
40	4800	.....	2375	P	31	14	27	4	4.12	5.25	4	C	T	T
41	4650	.....	2375	P	31	14	27	4	4.12	5.25	4	C	T	T
41	4650	.....	2375	P	31	14	27	4	4.12	5.25	4	C	T	T
.....	.....	Hoadley Bros., Gaspert, Ind.	.....	..	27	4	4.12	5.5	4	..	..	..	..
WF	4500	Harvey Motor Truck Works, Harvey, Ill.	2250	P, S, FB	41	16	29	4	4.25	5.5	4	C	H	
.....	4300	Kissel Motor Car Co., Hartford, Wis.	2100	.....	41	15	29	4	4.25	5.5	4	C	T	
LI	3700	Wm. Landshaft & Sons, Chicago, Ill.	1550	.....	36	14	27	4	4.12	5.5	4	C	H	
LI	3700	.....	1550	.....	36	14	27	4	4.12	5.5	4	C	H	
C	5500	Myers Machine Co., Sheboygan, Wis.	2275	P, S, FB	44	12	26	4	4	5.75	2	C	H	
LW	5100	Mogul Motor Truck Co., St. Louis, Mo.	2000	.....	31	15	27	4	4.12	5.25	4	C	H	
LW	5100	.....	2000	.....	31	15	27	4	4.12	5.25	4	C	H	

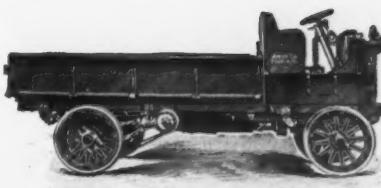
LAST HALF OF REVIEW. FIRST HALF WAS IN JANUARY ISSUE



**Denby Model E, 2-ton Covered Stake, Chassis, \$1985.
Also Panel, \$2315; Stake, \$2120; Flareboard, \$2105.**



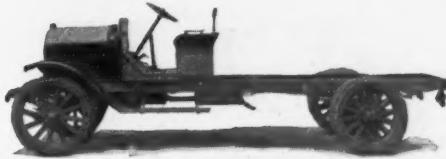
Diamond T, Model J-3, 2-ton High Stake, Chassis, \$2500.



Avery Model B, 2-ton Flareboard, \$2700.
Also Panel, \$3000; Stake, \$2075; Flareboard, \$2600.

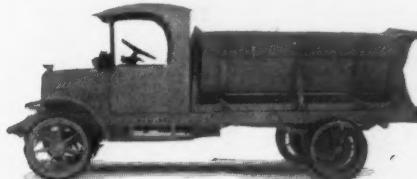
Commercial Cars

Indicators	Carburetor
Ignition	Spark-Plug Size
Lubrication	Clutch
Drive	Transmission
Speeds Forward	Type Rear Axle
Front Tires	Rear Tires
Steering Wheel	Brake and Gear Levers
Wheelbase	Engine Starter
% Total Weight on Rear Wheels	



Little Giant Model 16, 2-ton Chassis, \$2500.
Also Panel, \$2750; Stake, \$2625; Flareboard, \$2575.

Made by Chicago Pneumatic Tool Co.



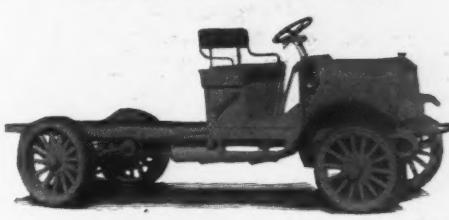
**Harvey Model WF, 2-ton Dump Body, Chassis, \$2250.
Also Panel, \$2150; Stake, \$2125; Flareboard, \$2000.**



Hoadley 2-ton Chassis.
Also Flareboard, \$3000.



Kissel Kar 2-top Chassis \$2100



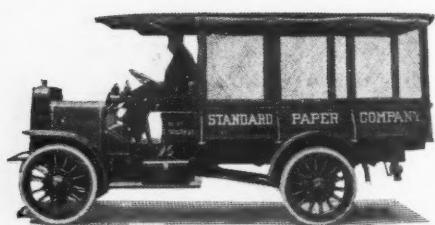
Dart Model C, 2-ton Chassis, \$1900.



**Duplex Model C, Four Wheel Drive, 2-ton
Chassis.**

BODY DETAILS OF CARS NOT ILLUSTRATED
West Coast 1½-ton Panel, \$1800.
Also Flareboard \$1800

LAST HALF OF REVIEW. FIRST HALF WAS IN JANUARY ISSUE



Mais Model E & F, 2-ton Screen Side, Chassis, \$2800.



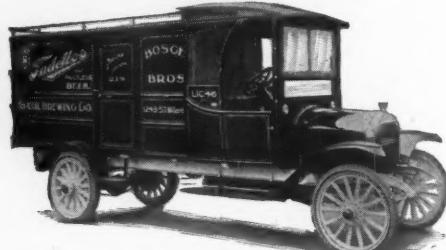
Hewitt-Ludlow 2½-ton Chassis, \$2250.



Republic Model A, 2-ton Chassis, \$1575.



Service Model 140, 2-ton Flareboard, Chassis, \$2250.



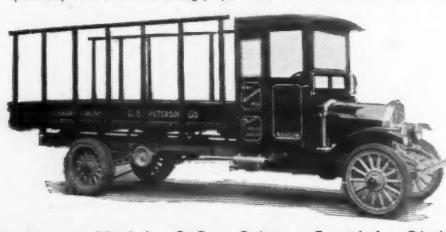
Sandon Model 2-W, 2-ton Side Door Panel, Chassis, \$2000.



Mogul Model L, 2½-ton Special Stake, Chassis, \$2250.



Jeffery Model 4016, 2 ton Hand Dump, \$3225. Also Stake, \$3000; Flareboard, \$3000; Side Dump, \$3225; Power Dump, \$3350; U. S. Box, \$2975.



Sandon Model 2-C, 2-ton Special Stake, Chassis, \$2350.



Hewitt-Ludlow 2½-ton Special Body, Chassis, \$2250.

Model	Chassis Weight	Chassis Price	Styles of Stock Bodies Furnished	Height of Loading Platform	Maximum Speed	Horse Power	Cylinders	Bore	Stroke	Cylinders Cast	How Cooled
4016	....	Thomas B. Jeffery Co., Kenosha, Wis.	2850 S, FB, D, PD	45 14 29	4	4.25	5.5	4	C	C	B
.....	4850	Old Reliable Motor Truck Co., Chicago, Ill.	2750	34 16 29	4	4.25	5	2	C	H	B
.....	5000	Mais Motor Truck Co., Indianapolis, Ind.	2450	32 16 26	4	4	6	4	C	C	C
E	5350	.....	2800	35 13 26	4	4	5.25	4	C	C	C
F	5350	.....	2800	35 13 26	4	4	5.25	4	C	C	C
2D	5210	Packard Motor Car Co., Detroit, Mich.	2800 S	43 14 26	4	4	5.5	4	C	H	B
2D	5210	.....	2800 S	43 14 26	4	4	5.5	4	C	H	B
D	4525	D. F. Poyer Co., Menominee, Mich.	2240 S, FB	40 14 27	4	4.12	5.25	4	C	T	B
D	4525	.....	2240 S, FB	40 14 27	4	4.12	5.25	4	C	T	B
.....	5000	Piggins Bros. Motor Truck Co., Racine, Wis.	2750	40 15 ..	4	4.25	5.5	2	W	..	..
A	3800	Republic Motor Truck Co., Alma, Mich.	1575 S, FB	47 13 27	4	4.12	5.5	4	C	T	B
J	4275	Red Motor Truck Co., Lansing, Mich.	1650 S, E, SS	44 15 27	4	4.12	4.5	2	C	T	..
140	4800	Service Motor Truck Co., Wabash, Ind.	2250	36 13 27	4	4.12	5.5	4	C	T	B
.....	5400	Sterling Motor Truck Co., Milwaukee, Wis.	2800	15 26	4	4	5.75	2	C	T	..
2W	3600	Sandon Truck Co., Chicago, Ill.	2000	36 18 27	4	4.12	5.25	4	W	H	B
2C	4250	.....	2350	36 18 26	4	4.12	5.25	4	W	H	B
J	4500	Signal Motor Truck Co., Detroit, Mich.	2100	15 23	4	4.12	5.25	4	C	H	B
70	4200	Standard Motor Truck Co., Detroit, Mich.	2000	42 15 27	4	4.12	5.25	4	C	B	L
.....	3000	Tower Motor Truck Co., Greenville, Mich.	1600	40 15 20	4	3.5	5	4	T	H	B
BSW	4750	United Motor Truck Co., Grand Rapids, Mich.	2250	34 15 29	4	4.25	5	4	G	H	B
D	2800	Universal Service Co., Detroit, Mich.	2800	12 26	4	4	5.5	2	C	C	..
D	2800	.....	2800	12 26	4	4	5.5	2	C	C	..
.....	4500	Viall Motor Car Co., Chicago, Ill.	1800	36 16 27	4	4.12	..	2	C	C	..
.....	4500	.....	1800	36 16 27	4	4.12	..	2	C	C	..
B	3800	Wichita Falls Motor Co., Wichita Falls, Texas.	2100	41 13 20	4	3.5	5	4	T	C	B
M	4000	.....	2100	42 13 20	4	3.5	5	4	T	C	B
2	.....	H. E. Wilcox Motor Co., Minneapolis, Minn.	2000 P, S, FB	15 29	4	4.25	5	2	C	V	..
2-TC	3700	Zeitler & Lamson Truck Co., Inc., Chicago, Ill.	2000	44 .. 27	4	4.12	5.25	4	C	C	B

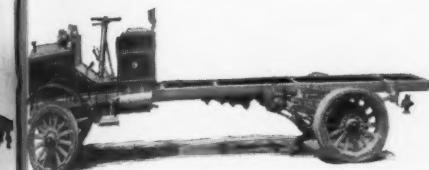
2½ Ton Gasoline

CC	4600	Dart Motor Truck Co., Waterloo, Ia.	2100	17 27	4	4.12	5.5	4	C	H	B
D-2½	5125	De Kalb Wagon Co., De Kalb, Ill.	2450	43 12 27	4	4.12	5.25	4	C	T	B
D-2½	5125	.....	2450	43 12 27	4	4.12	5.25	4	C	T	B
D-2½	5125	.....	2450	43 12 27	4	4.12	5.25	4	C	T	B
D-2½	5125	.....	2450	43 12 27	4	4.12	5.25	4	C	T	B
C	4800	Gerlinger Motor Car Co., Portland, Ore.	2500	34 15 34	6	3.75	5.5	6	C	H	B
.....	.....	Hewitt-Ludlow Auto Co., San Francisco, Cal.	2350	23 ..	4	3.75	5.5	4	C	H	B
.....	.....	.....	2250	23 ..	4	3.75	5.5	4	C	H	B
2	5250	Kleiber & Co., Inc., San Francisco, Cal.	2750	33 16 27	4	4.12	5.25	4	C	T	BL
2	5250	.....	2750	33 16 27	4	4.12	5.25	4	C	T	BL
L	5300	Mogul Motor Truck Co., St. Louis, Mo.	2250	31 15 27	4	4.12	5.25	4	C	H	C
L	5300	.....	2250	31 15 27	4	4.12	5.25	4	C	H	C
2½	4550	Moreland Motor Truck Co., Los Angeles, Cal.	2550	34 15 32	4	4.5	5.5	2	W	T	..

Jeffery Model 4016, 2 ton Stake, \$3000. Also Hand Dump, \$3225; Flareboard, \$3000; Side Dump, \$3225; Power Dump, \$3350; U. S. Box, \$2975.



Old Reliable 2-ton Stake, Chassis, \$2750.



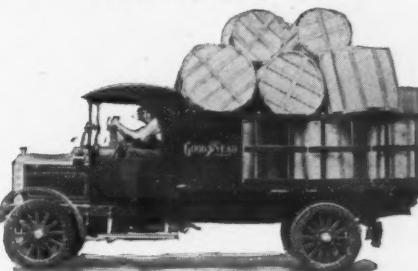
Wichita Model B, 2-ton Chassis, \$2100.



United Model BSW, 2-ton Chassis, \$2250.



Jeffery Model 4016, 2 ton Tank, Chassis, \$2850.
Also Stake, \$3000; Hand Dump, \$3225; Flareboard, \$3000; Side Dump, \$3225; Power Dump, \$3350; U. S. Box, \$2975.



Sterling 2-ton Stake, Chassis, \$2800.



Wisconsin Model C, 2-ton Chassis, \$2275.
Also Panel, \$2475; Stake, \$2400; Flareboard, \$2400.

Made by Myers Machine Co.



Reo Model J, 2-ton Screen Side, Chassis, \$1650.
Also High Stake, \$1825; Express, \$1800; Express with Top, \$1850; Express with Top and Screen, \$1875; Low Stake, \$1800.



Menominee Model D, 2-ton Stake, \$2390.
Also Flareboard, \$2390.

Made by D. F. Poyer Co.



Hewitt-Ludlow 2 1/2-ton Stake, Chassis, \$2250.

BODY DETAILS OF CARS NOT ILLUSTRATED
Packard Model 2-D, 2-ton Stake, \$2920.
Wilcox Model Q, 2-ton Panel, \$2300.
Also Stake, \$2200; Flareboard, \$2175.

Commercial Cars

Dart Motor Truck Co., Waterloo, Ia.

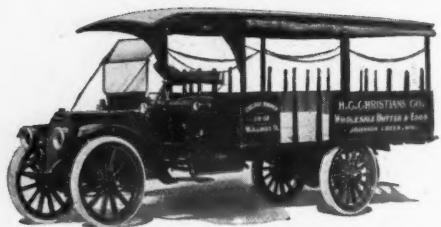
B	B	E	S	SF	D	W	S	3	S	36x4	36x4D	L	C	150	..	75	
T	B	E	S	SF	C	C	S	3	D	36x4	36x6	L	C	136	..	71	
T	B	E	S	SF	C	W	S	3	F	36x4	36x6	L	C	136	..	71	
T	B	E	S	SF	C	C	S	3	D	36x4	36x6	L	C	144	..	71	
T	B	E	S	SF	C	W	S	3	F	36x4	36x6	L	C	144	..	71	
H	B	WS	S	F	D	W	IC	3	F	36x4	36x7	L	C	150	WS	85	
H	B	R	..	SF	C	W	S	3	S	36x3 1/2	36x7	L	C	140	..	..
H	B	R	..	SF	C	C	S	3	D	36x3 1/2	36x7	L	C	140	..	..
T	L	B	S	SF	D	W	S	3	S	36x4	36x7	R	C	150	..	75	
T	L	B	S	SF	D	W	S	3	S	36x4	36x3 1/2 D	R	C	150	..	75	
H	B	1/2	SF	D	C	C	S	3	D	.....	.....	L	C	138	..	60
H	B	1/2	SF	D	C	C	S	3	D	.....	.....	L	C	148	..	60
T	B	S	S	S	D	D	W	S	4	F	34x4	34x4D	R	C	168



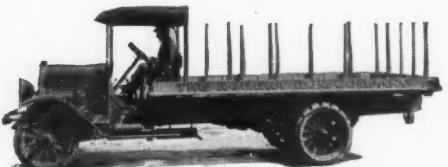
Dart Model CC, 2 1/2-ton Chassis, \$2100.



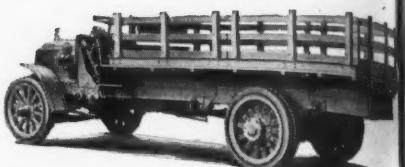
Standard Model 70, 2-ton Stake, Chassis, \$2000.



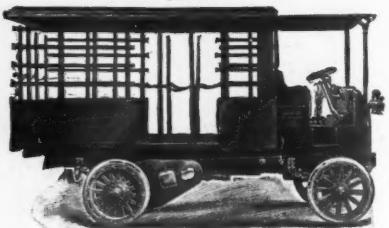
Stegeman 2 1/2-ton Covered Stake, Chassis, \$2500.



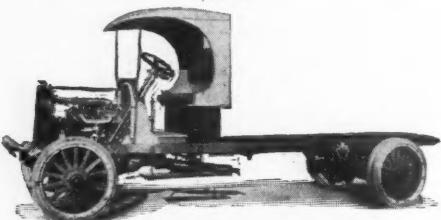
Kissel Kar 3-ton Stake, Chassis, \$2750.



Packard Model 3-D, 3-ton Stake, \$3500.



Avery Model B, 3-ton Covered Stake, Chassis, \$3200. Also Panel, \$3475; Stake, \$3475; Flareboard, \$3300.



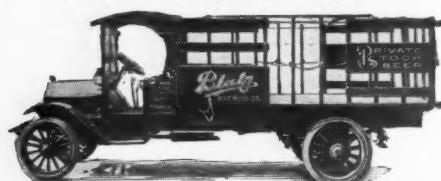
Acme 3-ton Chassis, \$2450. Made by Acme Motor Truck Co.



Horner 3-ton Stake, Chassis, \$3200. Made by Detroit-Wyandotte Motor Truck Co.



GMC Model 71, 3 1/2-ton Chassis. Model 70A, \$3300; Model 71A, \$3300; Model 70B, \$3350; Model 71B, \$3350. Made by General Motors Truck Co.



Available 3 1/2-ton Stake.



Federal Model L, 3 1/2-ton Tank Body, Chassis, \$2800.

Model	Chassis Weight	Chassis Price	Styles of Stock Bodies Furnished	Maximum Speed	Height of Loading Platform	Horse Power	Cylinders	Bore	Stroke	Cylinders Cast	How Cooled	Dimensions
.....	5000	Pacific Metal Products Co., Torrance, Cal.										
.....	2500	Stegeman Motor Car Co., Milwaukee, Wis.										
.....	5000	Zeitzer & Lamson Truck Co., Inc., Chicago, Ill.										
2 1/2-SW	4600	2200	.....	46	26	4	4	6	4	4	C	OB

2 1/2 Ton Gasoline

Model	Chassis Weight	Chassis Price	Styles of Stock Bodies Furnished	Maximum Speed	Height of Loading Platform	Horse Power	Cylinders	Bore	Stroke	Cylinders Cast	How Cooled	Dimensions	
.....	5000	Pacific Metal Products Co., Torrance, Cal.											
.....	2500	Stegeman Motor Car Co., Milwaukee, Wis.											
.....	5000	Zeitzer & Lamson Truck Co., Inc., Chicago, Ill.											
2 1/2-SW	4600	2200	.....	46	26	4	4	6	4	4	C	OB
B	6250	Avery Co., Peoria, Ill.											
.....	3200	P, S, FB		13	36	4	4.75	5	1	C	OB		
.....	2450	Acme Motor Truck Co., Detroit, Mich.		14	31	4	4.37	6	2	C	OB		
.....	2450	.....	14	31	4	4.37	6	2	C	OB		
Horner	6850	Detroit-Wyandotte Motor Truck Co., Wyandotte, Mich.		43	14	32	4	4.5	5.5	2	C	OB	
Horner	6850	3200	43	14	32	4	4.5	5.5	2	C	OB	
D	6300	Duplex Power Car Co., Charlotte, Mich.		39	10	29	4	4.25	5.5	4	C	OB	
D	6300	.....	39	10	29	4	4.25	5.5	4	C	OB	
E	6500	.....	39	10	29	4	4.25	5.5	4	C	OB	
E	6500	Diamond T Motor Car Co., Chicago, Ill.		40	12	32	4	4.5	5.5	2	T	OB	
L	6200	Four Wheel Drive Auto Co., Clintonville, Wis.		44	14	36	4	4.75	5.5	2	C	OB	
B	6060	Kissel Motor Car Co., Hartford, Wis.		43	12	32	4	4.5	5.25	4	C	OB	
.....	5300	Krebs Commercial Car Co., Clyde, Ohio.		13	32	4	4.5	5.5	2	C	OB		
90	6400	Old Reliable Motor Truck Co., Chicago, Ill.		13	32	4	4.5	5.5	2	C	OB		
.....	6000	3250	.....	13	32	4	4.25	6	4	C	OB	
K	6000	Mais Motor Truck Co., Indianapolis, Ind.		53	12	30	4	4.31	5.25	4	C	OB	
L	6000	3300	53	12	30	4	4.31	5.25	4	C	OB	
H	6000	3300	53	12	30	4	4.31	5.25	4	C	OB	
3D	6900	Packard Motor Car Co., Detroit, Mich.		45	12	32	4	4.5	5.5	4	C	OB	
3D	6900	3400	45	12	32	4	4.5	5.5	4	C	OB	
.....	7000	Pacific Metal Products Co., Torrance, Cal.		38	15	32	4	4.5	5.5	2	C	OB	
T	6300	Republic Motor Truck Co., Alma, Mich.		48	11	29	4	4.25	5.5	4	C	OB	
T	6300	.....	48	11	29	4	4.25	5.5	4	C	OB	
3W	5750	Sandow Truck Co., Chicago, Ill.		40	12	32	4	4.5	5.5	4	W	OB	
3C	5625	3000	36	12	32	4	4.5	5.5	4	W	OB	
A	3400	Universal Service Co., Detroit, Mich.		12	26	4	4	5.5	2	C	OB		
A	3400	.....	12	26	4	4	5.5	2	C	OB		

3 1/2 Ton Gasoline

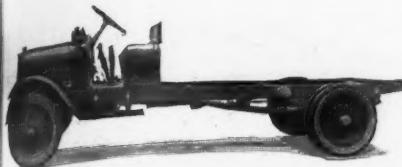
Model	Chassis Weight	Chassis Price	Styles of Stock Bodies Furnished	Maximum Speed	Height of Loading Platform	Horse Power	Cylinders	Bore	Stroke	Cylinders Cast	How Cooled	Dimensions	
.....	6100	Acason Motor Truck Co., Detroit, Mich.		42	15	29	4	4.25	5.75	2	C	OB	
3 1/2	6200	Available Truck Co., Chicago, Ill.		38	12	32	4	4.5	5.5	2	C	OB	
CM	9000	Continental Motor Truck Co., Chicago, Ill.		25	32	4	4.5	5.5	2	C	OB		
L	6200	Federal Motor Truck Co., Detroit, Mich.		34	12	32	4	4.5	5.5	2	C	OB	
L	6200	.....	34	12	32	4	4.5	5.5	2	C	OB	
70-A	6500	General Motors Truck Co., Pontiac, Mich.		35	12	32	4	4.5	5.5	2	C	OB	
70-B	6500	3350	35	12	32	4	4.5	5.5	2	C	OB	
71-A	6500	3300	35	12	32	4	4.5	5.5	2	C	OB	
71-B	6500	3350	35	12	32	4	4.5	5.5	2	C	OB	
77	7230	Garford Motor Truck Co., Lima, Ohio.		11	36	4	4.75	5.5	2	C	OB		

3 1/2 Ton Gasoline

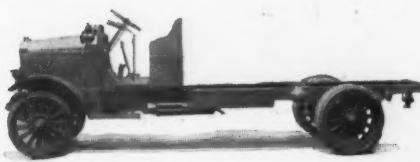
Model	Chassis Weight	Chassis Price	Styles of Stock Bodies Furnished	Maximum Speed	Height of Loading Platform	Horse Power	Cylinders	Bore	Stroke	Cylinders Cast	How Cooled	Dimensions
.....	44	Quinland Motor Truck Co., Indianapolis, Ind.		15	29	4	4.25	5.75	2	C	OB	
.....	38	.....	15	29	4	4.25	5.75	2	C	OB		
.....	35	Jack Bennett Cartage Co., New York City.		12	32	4	4.5	5.5	2	C	OB	

Diamond T, Model L, 3-ton Stake, Chassis, \$3600.

Federal Model L, 3 1/2-ton Stake, Chassis, \$2800.



Republic Model T, 3-ton Chassis, \$2350.
Also Panel, \$2400.



Acason Model 3 1/2, 3 1/2-ton Chassis.



Sandow Model 3-C, 3-ton Stake, Chassis, \$3000.

Commercial Cars

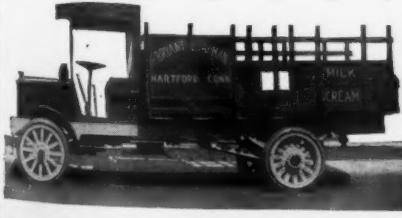
Ignition	Spark-Plug Size	Lubrication	Clutch	Drive	Transmission	Speeds Forward	Type Rear Axle	Front Tires	Rear Tires	Steering Wheel	Brake and Gear Levers	Wheelbase	Engine Starter	% Total Weight on Rear Wheels
T S	SD	S	SF	Pacific Metal Products Co., Torrance, Cal.	C C S 3 D	36x4	36x3 1/2 D	L	C	163	..	75		
H B	WS	..	SF	Stegeman Motor Car Co., Milwaukee, Wis.	D W S 3 F	34x4	36x4 D	L	C	162	WS	80		
C B	B	S	SF	Zeitler & Lamson Truck Co., Inc., Chicago, Ill.	D W S 3 S	36x4	36x7	L	C	160	X	55		

Commercial Cars

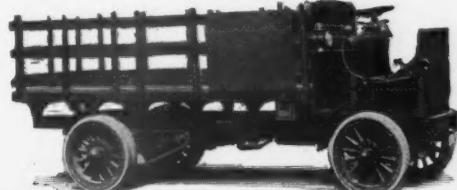
C	E	S	F	Avery Co., Peoria, Ill.	B C S 3 D	38x5	38x4 D	R	C	128	..	70		
C	MG	SS	S	Acme Motor Truck Co., Detroit, Mich.	D W S 3 S	36x5	36x4 D	L	C	144	..	75		
C	MG	SS	S		D W S 3 S	36x5	36x4 D	L	C	156	..	75		
T B	B	..	..	Detroit-Wyandotte Motor Truck Co., Wyandotte, Mich.	D W S 3 D	36x5	40x4 D	..	R	145	..	66		
T B	B	..	..	Duplex Power Car Co., Charlotte, Mich.	D C S 3 D	36x5	40x4 D	..	R	145	..	66		
V L	..	S	SF	Diamond T Motor Car Co., Chicago, Ill.	D IG S 4 D	37x5	27x5	L	C	130	WS	57		
V L	..	S	SF	Four Wheel Drive Auto Co., Clintonville, Wis.	D IG S 4 D	37x5	27x5	L	C	130	B	57		
V L	..	S	SF	Kissel Motor Car Co., Hartford, Wis.	D IG S 4 D	37x6	37x6	L	C	130	WS	57		
V L	..	S	SF	Old Reliable Motor Truck Co., Chicago, Ill.	D IG S 4 D	37x6	37x6	L	C	130	B	57		
H B	B	S	SF	Mals Motor Truck Co., Indianapolis, Ind.	D W S 4 F	36x5	38x5 D	R	C	160	..	90		
C C	E	..	SF	Packard Motor Car Co., Detroit, Mich.	IG P 3 D	36x5	36x5 D	L	L	132	..	..
C C	E	..	SF		IG P 3 D	36x5	36x5 D	L	L	145	..	..
C C	E	..	SF		IG P 3 D	36x5	36x5 D	L	L	160	..	..
H B	B	..	S	Republic Motor Truck Co., Alma, Mich.	D W P 3 F	36x5	36x5 D	L	L	132	X	72		
T B	B	..	S	Sandow Truck Co., Chicago, Ill.	D IG S 4 D	36x5	36x5 D	L	C	185	X	80		
H B	B	..	S	Universal Service Co., Detroit, Mich.	D C S 3 D	36x5	36x5 D	R	C	186	..	50		
C C	E	S	SF	Garford Motor Truck Co., Lima, Ohio.	C C S 3 D	36x5	36x4 D	L	L	132	..	79		
C C	E	S	SF		C C S 3 D	36x5	36x4 D	L	L	150	..	79		

Commercial Cars

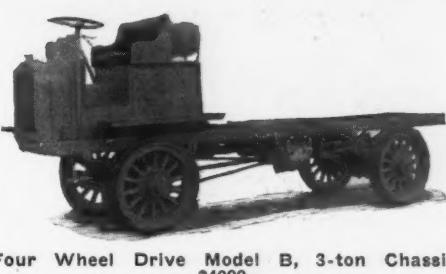
..	MG	S	S	Acason Motor Truck Co., Detroit, Mich.	D W S 4 F	36x4	38x5 D	R	C	170	..	80		
T B	MG	S	S	Available Truck Co., Chicago, Ill.	D W S 3 F	36x5	40x5 D	L	C	..	..	..
T B	MG	..	SF	Continental Motor Truck Co., Chicago, Ill.	D W S 3 F	36x5	36x5 D	..	C	..	..	..
C B	E	S	SF	Federal Motor Truck Co., Detroit, Mich.	D W S 3 F	36x5	36x5 D	R	C	146	..	72		
C B	E	S	SF		D W S 3 F	36x5	36x5 D	R	C	170	..	72		
T B	E	S	SF	General Motors Truck Co., Pontiac, Mich.	D C S 4 D	36x5	40x5 D	L	C	163	..	89		
T B	E	S	SF		D C S 4 D	36x5	40x5 D	L	C	187	..	89		
T B	E	S	SF		D W S 4 F	36x5	40x5 D	L	C	163	..	89		
T B	E	S	SF		D W S 4 F	36x5	40x5 D	L	C	187	..	89		
C	SD	S	SF	Garford Motor Truck Co., Lima, Ohio.	D W S 4 F	36x5	40x5 D	R	C	128	..	67		



Federal Model L, 3 1/2-ton Special Stake, Chassis, \$2800.



Universal Model A, 3-ton Stake, Chassis, \$3400.



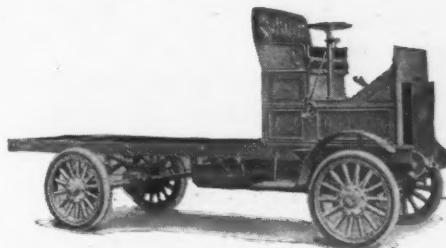
Four Wheel Drive Model B, 3-ton Chassis, \$4000.



Sandow Model 3-W, 3-ton Moving Van, Chassis, \$2500.



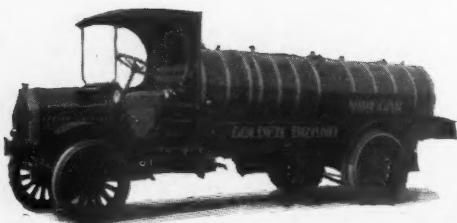
Moore 3-ton Covered Flareboard, Chassis, \$3150.
Made by Pacific Metal Products Co.



Practical Piggins, 3-ton Chassis.
Made by Piggins Bros. Motor Truck Co.



Federal Model L, 3 1/2-ton Dump Body, Chassis, \$2800.



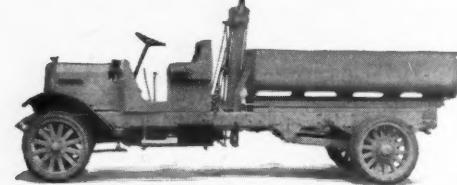
Hewitt-Ludlow 3 1/2-ton Tank Body, Chassis, \$3000.



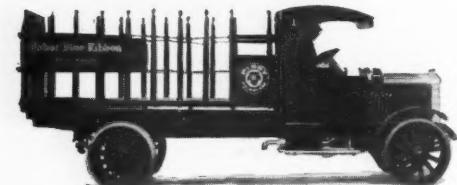
Hewitt-Ludlow 3 1/2-ton Stake, Chassis, \$3000.



South Bend Model 60, 3 1/2-ton Chassis, \$3350.



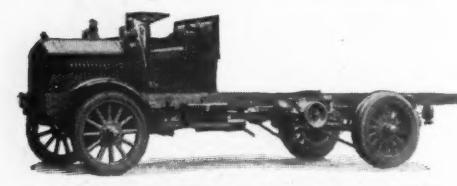
Signal Model M, 3 1/2-ton Dump, Chassis, \$3000.



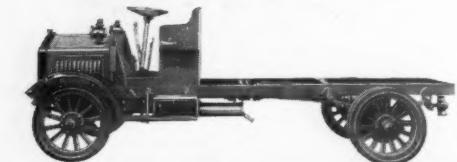
Sterling 3 1/2-ton Stake, Chassis, \$3400.



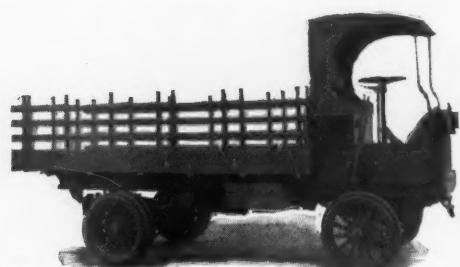
Velle Model 26, 3 1/2-ton Chassis, \$3350. Also Stake, \$3500; Flareboard, \$3500.



Hall 3 1/2-ton Chain Drive Chassis, \$2800. Made by Lewis-Hall Iron Wks.



United Model CSW, 3 1/2-ton Chassis, \$2900.



King 3 1/2-ton Stake, Chassis, \$2600.



Mogul Model T, 3 1/2-ton Stake, Chassis, \$2500.

3 1/2 Ton Gasoline

Model	Chassis Weight	Chassis Price	Styles of Stock Bodies Furnished	Height of Loading Platform	Maximum Speed	Horse Power	Cylinders	Bore	Stroke	Cylinders Cast	How Cooled
WH	7300	2950	Harvey Motor Truck Works, Harvey, Ill.	43	13	29	4	4.25	5.5	4	C C
WH	7300	2950	.....	43	13	29	4	4.25	5.5	4	C C
.....	.....	3000	.....	..	29	4	4.25	5.5	4	4	C C
.....	.....	3000	.....	..	29	4	4.25	5.5	4	4	C C
3	6750	3300	Kleiber & Co., Inc., San Francisco, Cal.	34	14	32	4	4.5	5.5	2	C C
.....	6100	2800	Lewis-Hall Iron Wks., Detroit, Mich.	37	15	32	4	4.5	5.5	2	C C
.....	6100	2800	.....	37	15	32	4	4.5	5.5	2	C C
T	6000	2550	Mogul Motor Truck Co., St. Louis, Mo.	31	12	32	4	4.5	5.5	2	C C
T	6000	2550	.....	31	12	32	4	4.5	5.5	2	C C
170	6200	3000	Service Motor Truck Co., Wabash, Ind.	39	12	29	4	4.25	5.5	4	C C
.....	6000	3000	Stegeman Motor Car Co., Milwaukee, Wis.	12	34	6	3.75	5.25	3	C C	
.....	6350	3400	Sterling Motor Truck Co., Milwaukee, Wis.	13	29	4	4.25	5.75	2	C C	
60	6500	3350	South Bend Motor Car Works, South Bend, Ind.	43	15	36	4	4.75	5.5	2	C C
M	6800	3000	Signal Motor Truck Co., Detroit, Mich.	15	23	4	4.5	5.25	2	C C	
M	6800	3000	.....	15	23	4	4.5	5.25	2	C C	
35	6800	2800	Standard Motor Truck Co., Detroit, Mich.	42	12	32	4	4.5	5.5	2	C C
60	6750	2850	.....	40	12	32	4	4.5	5.5	2	C C
CSW	6670	2900	United Motor Truck Co., Grand Rapids, Mich.	36	12	36	4	4.75	5.5	2	G H B
26	6500	3350	Velie Motor Vehicle Co., Moline, Ill.	42	12	32	4	4.5	5.5	2	C C
O	6400	3250	Wichita Falls Motor Co., Wichita Falls, Texas.	44	11	29	4	4.25	5.75	2	C C
P	2900	P, S, FB	H. E. Wilcox Motor Co., Minneapolis, Minn.	34	12	29	4	4.25	5	2	C C

4 Ton Gasoline

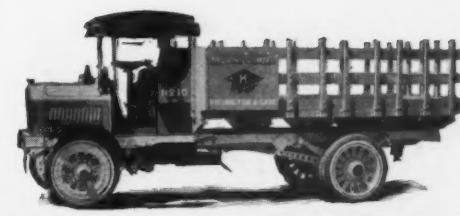
.....	3000	3000	Acme Motor Truck Co., Detroit, Mich.	12	31	4	4.37	6	2	C C	
.....	3000	3000	Continental Motor Truck Co., Chicago, Ill.	12	31	4	4.37	6	2	C C	
CP	9500	3350	De Kalb Wagon Co., De Kalb, Ill.	25	32	4	4.5	5.5	2	C C	
D-4	8360	3600	.....	45	10	40	4	5	5.75	2	C C
4	7500	3350	Kissel Motor Car Co., Hartford, Wis.	48	10	38	4	4.87	5	2	C C
4	6520	3400	Moreland Motor Truck Co., Los Angeles, Cal.	38	12	36	4	4.75	6.75	2	W W
4D	7293	3800	Old Reliable Motor Truck Co., Chicago, Ill.	49	12	32	4	4.5	5.5	4	C C
4D	7293	3800	Packard Motor Car Co., Detroit, Mich.	49	12	32	4	4.5	5.5	4	C C
.....	6800	3750	.....	36	14	36	4	4.75	5.5	2	C C
.....	6800	3750	.....	34	13	36	4	4.75	5.5	2	C C
4D	7293	3800	Pacific Metal Products Co., Torrance, Cal.	49	12	32	4	4.5	5.5	4	C C
4D	7293	3800	Standard Motor Truck Co., Detroit, Mich.	49	12	32	4	4.5	5.5	4	C C
.....	9000	3500	.....	38	13	36	4	4.75	5.5	2	C C
40	7300	3025	Standard Motor Truck Co., Detroit, Mich.	42	10	32	4	4.5	5.5	2	C C
40	7300	3025	.....	42	10	32	4	4.5	5.5	2	C C

5 Ton Gasoline

CS	10000	4000	Continental Motor Truck Co., Chicago, Ill.	25	32	4	4.5	5.5	2	C C	
Hornet	8520	4200	Detroit-Wyandotte Motor Truck Co., Wyandotte, Mich.	44	12	44	4	5.25	5.75	2	C C
Hornet	8520	4200	.....	44	12	44	4	5.25	5.75	2	C C
100-A	7300	3850	General Motors Truck Co., Pontiac, Mich.	36	10	32	4	4.5	5.5	2	C C
100-B	7300	3900	.....	36	10	32	4	4.5	5.5	2	C C
101-A	7500	3850	.....	36	10	32	4	4.5	5.5	2	C C
101-B	7500	3900	.....	36	10	32	4	4.5	5.5	2	C C



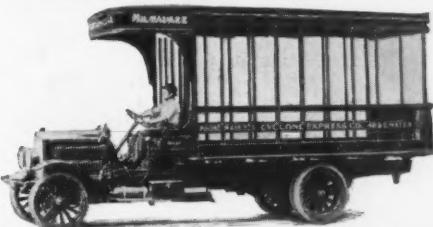
Service Model 170, 3 1/2-ton Covered Dairy Body, Stegeman 3 1/2-ton Covered Flareboard, Chassis, \$3000.



Standard Model 60, 3 1/2-ton Stake, Chassis, \$2850.



Moore 4-ton Tank, Chassis, \$3500. Made by Pacific Metal Products Co.



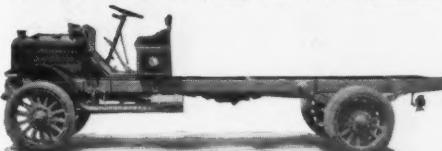
Kissel Kar 4-ton Covered Stake, Chassis, \$3350



Standard Model 35, 3 1/2-ton Side Door Milk Body, Chassis, \$2800.



Harvey Model WH, 3 1/2-ton Chassis, \$2950.



Wichita Model O, 3 1/2-ton Chassis, \$3250.



Hall 3 1/2-ton Worm Drive Chassis, \$2800. Made by Lewis-Hall Iron Wks.

BODY DETAILS OF CARS NOT ILLUSTRATED

Wilcox Model P, 3 1/2-ton Panel, \$3225.

Also Stake, \$3100; Flareboard, \$3100.

Packard Model 4-D, 4-ton Stake, \$3950.

Commercial Cars

Ignition	Spark-Plug Size	Lubrication	Clutch	Drive	Transmission	Speeds Forward	Type Rear Axle	Front Tires	Rear Tires	Steering Wheel	Brake and Gear Levers	Wheelbase	Engine Starter	% Total Weight on Rear Wheels
E E	S S	S S						C 36x5	36x5D	L C	150	..	80	
R R	..	S F	C C	S 4	D 36x5	40x5D	L C	168	..	..	80		
R R	..	S F	C C	S 3	D 36x5	40x5D	L C	156	..	..	..
L B	S	S F	E W	S 3	S 36x5	36x5D	R C	160	..	..	75		
T B	S	S F	D W	P 3	F ..	..	..	..	..	..	..	80	
T B	S	S F	D C	P 3	D ..	..	..	..	..	..	..	80	
H B	1/2	S F	C C	S 3	D ..	..	..	..	..	..	..	60	
H B	1/2	S F	C C	S 3	D ..	..	..	..	..	..	..	60	
T B	E	S F	D W	S 4	F 36x5	36x5D	L C	171	..	X	70			
T B	WS	..	S F	D W	S 3	F 36x4	40x5D	L C	156	..	..	80	
T B	E	S F	D W	S 3	S 36x4	36x5D	L C	158	X	..	90			
G B	B	S F	D W	S 3	F 36x6	36x4D	.. R	160	..	..	65		
I B	E	S F	D W	S 3	F 40x5	40x5D	.. C	168	..	..	70		
H B	E	S F	D W	S 3	F 40x5	40x5D	.. C	204	..	..	70		
V B	E	S S	D C	S 3	D 36x5	36x5D	L C	168	..	X	70			
V B	E	S S	D W	S 3	F 36x5	36x5D	L C	168	X	..	70			
H B	MG	S F	D W	S 3	S 36x5	36x5D	L C	144	..	..	84		
T B	B	S S	D W	S 4	F ..	D	R R	172	..	..	75		
C B	SD	S S	C W	S 3	S ..	D	R C	165	..	..	75		
V B	MG	S S	C W	S 3	S 36x5	36x5D	L C	160	A	..	..	

Commercial Cars

Acme Motor Truck Co., Detroit, Mich.

MG S SF D W S 4 S 36x5 36x5D L C 144 .. 75

MG S SF D W S 4 S 36x5 36x5D L C 156 .. 75

Continental Motor Truck Co., Chicago, Ill.

MG .. SF D W S 4 3/4 36x5 40x5D .. C

De Kalb Wagon Co., De Kalb, Ill.

E S SF C C S 3 F 36x6 40x5D R R 136 .. 65

Kissel Motor Car Co., Hartford, Wis.

MG S SF C C S 4 D 36x5 40x5D L C 162 .. 75

Moreland Motor Truck Co., Los Angeles, Cal.

.. B S D W S 4 F 36x5 38x5D R C 168

Old Reliable Motor Truck Co., Chicago, Ill.

B S F D C S 3 D 36x5 36x5D L C 126 .. 60

D D W S 3 S 36x5 40x5D R C 159 .. 80

Packard Motor Car Co., Detroit, Mich.

B S F D W P 3 F 36x5 40x5D L L 132 X 74

B S F D W P 3 F 36x5 40x5D L L 216 X 74

Pacific Metal Products Co., Torrance, Cal.

SD S SF C C S 3 D 36x5 36x5D R R 153 .. 75

Standard Motor Truck Co., Detroit, Mich.

E S S S D C S 3 D 36x6 40x6D L C 168 .. 70

D D C S 4 D 36x6 40x6D L C 168 .. 70

Commercial Cars

Continental Motor Truck Co., Chicago, Ill.

MG .. SF D C S 3 .. 36x5 40x6D .. C

Detroit-Wyandotte Motor Truck Co., Wyandotte, Mich.

B B .. D W S 3 .. 38x6 42x6D .. R 156 .. 66

D D C S 3 D 38x6 42x6D .. R 156 .. 66

General Motors Truck Co., Pontiac, Mich.

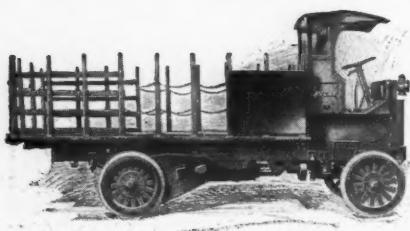
EE E SF D C S 4 D 36x6 40x6D L C 163 .. 89

SF D C S 4 D 36x6 40x6D L C 187 .. 89

SF D W S 4 F 36x6 40x6D L C 163 .. 89

SF D W S 4 F 36x6 40x6D L C 187 .. 89

LAST HALF OF REVIEW. FIRST HALF WAS IN JANUARY ISSUE



Avery Model B, 5-ton Stake, \$4700.
Also Panel, \$5090; Flareboard, \$4600.



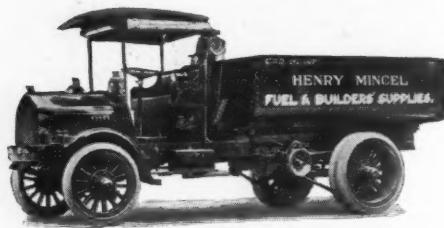
Kissel Kar 6-ton Dump, Chassis, \$4350.



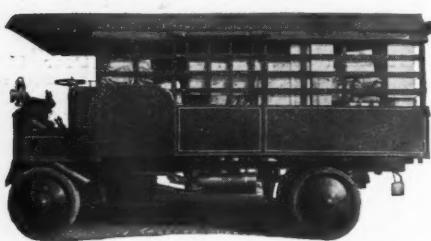
Harvey Model WK, 5-ton Stake, Chassis, \$3500.



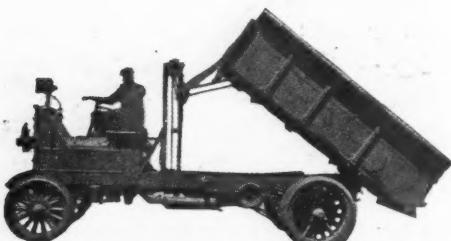
Service Model HX, 6-ton Dump, Chassis, \$4000.



Hall 5-ton Dump, Chassis, \$3400.
Made by Lewis-Hall Iron Wks.



Couple Gear Model AC, 7 1/2-ton Covered Stake,
Chassis, \$5000.
Also Panel, \$5300; Stake, \$5200; Flareboard,
\$5200.



Moore 5-ton Dump, Chassis, \$4950.
Made by Pacific Metal Products Co.



Standard Model 50, 5-ton Dump, Chassis, \$3400.

5 Ton Gasoline

Model	Chassis Weight	Chassis Price	Styles of Stock Bodies Furnished	Height of Load-ing Platform	Maximum Speed	Horse Power	Cylinders	Bore	Stroke	Cylinders Cast	How Cooled	Insulator	Carburetor
B	7750	Avery Co., Peoria, Ill. 4500 P. S. FB	..	10	44	4	5.25	5.75	2	C	C	EL	
WK	8300	Harvey Motor Truck Works, Harvey, Ill. 3650	45	12	32	4	4.5	6	4	C	C	H	
WK	8300	3650	45	12	32	4	4.5	6	4	C	C	H	
5	8500	Kleiber & Co., Inc., San Francisco, Cal. 4250	36	12	44	4	5.25	5.75	2	C	T	EL	
.....	7460	Lewis-Hall Iron Wks., Detroit, Mich. 3400	39	12	32	4	4.5	5.5	2	C	T	EL	
.....	7600	Old Reliable Motor Truck Co., Chicago, Ill. 4250	38	12	36	4	4.75	5.5	2	C	H	SB	
.....	7200	4250	34	13	36	4	4.75	5.5	2	C	H	SB	
.....	12000	Pacific Metal Products Co., Torrance, Cal. 4500	45	12	44	4	5.25	7	2	C	T	MS	
.....	13000	4950 D	63	12	44	4	5.25	7	2	C	C	T	MS
.....	7000	Stegeman Motor Car Co., Milwaukee, Wis. 4000 .....	..	10	34	6	3.75	5.25	3	C	T	SB	
.....	8750	Sterling Motor Truck Co., Milwaukee, Wis. 4500 .....	..	11	32	4	4.5	6.75	2	C	C	T	MS
.....	8750	4500 .....	..	11	32	4	4.5	6.75	2	C	C	T	MS
50	7900	Standard Motor Truck Co., Detroit, Mich. 3400	46	9	32	4	4.5	5.5	2	C	V	WB	
50	7900	3400	46	9	32	4	4.5	5.5	2	C	C	WB	
ESW	8350	United Motor Truck Co., Grand Rapids, Mich. 3500	38	10	41	4	5.1	5.5	2	G	H	SB	
.....	5000	3500	36	12	32	4	4.5	5.5	2	C	C	WB	

6 Ton Gasoline

.....	9000	Kissel Motor Car Co., Hartford, Wis. 4350	48	9	38	4	4.87	5	2	C	T	SB	
M	8500	Mogul Motor Truck Co., St. Louis, Mo. 3800	41	12	44	4	5.25	5.75	2	C	H		
M	8500	3800	41	12	44	4	5.25	5.75	2	C	H		
.....	8600	Old Reliable Motor Truck Co., Chicago, Ill. 4500	40	12	36	4	3.75	6.75	2	C	H	SB	
HX	7400	Service Motor Truck Co., Wabash, Ind. 4000	39	11	36	4	4.75	6.75	2	C	P	SB	

7 Ton Gasoline

.....	9600	Old Reliable Motor Truck Co., Chicago, Ill. 4750	48	10	42	4	5.1	5.5	2	C	T	SB	
.....	8970	Sterling Motor Truck Co., Milwaukee, Wis. 4750 .....	..	10	36	4	4.75	6.75	2	C	T	SB	
.....	8970	4750 .....	..	10	36	4	4.75	6.75	2	C	T	SB	

7 1/2 Ton Gasoline

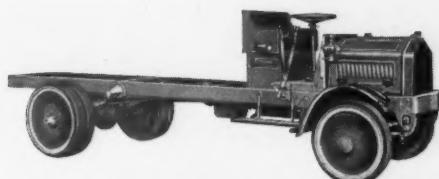
AC	9000	Couple Gear Freight Wheel Co., Grand Rapids, Mich. 5000 P, S, FB	44	12	53	4	5.75	6	1	G	H	
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Gasoline Tractors

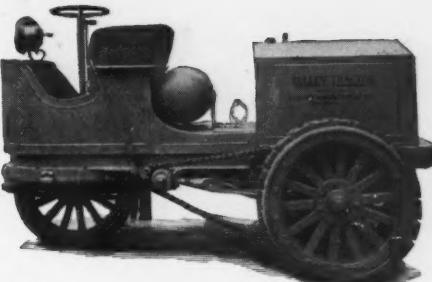
ACT	10000	Couple Gear Freight Wheel Co., Grand Rapids, Mich. 5500	46	10	53	4	5.75	6	1	G	H		
.....	8500	Dominion Motor Truck Co., Detroit, Mich. 45 S	45	9	36	4	4.75	5.5	2	C	T		
A	5600	Mercury Mfg. Co., Chicago, Ill. 3400 .....	..	12	29	4	4.25	5	2	C	H		
C	6500	Standard Tractor Co., Inc., Brooklyn, N. Y. 3450 .....	..	12	36	4	4.75	6.75	2	C	C		
D	8400	4200 .....	..	9	36	4	4.75	6.75	2	C	C		
.....	7400	Old Reliable Motor Truck Co., Chicago, Ill. 7400 .....	..	10	42	4	5.1	5.5	2	C	T		



~~\$36~~ couple Gear Model ACJ, 10-ton Tractor,
Chassis without Trailer, \$5500.



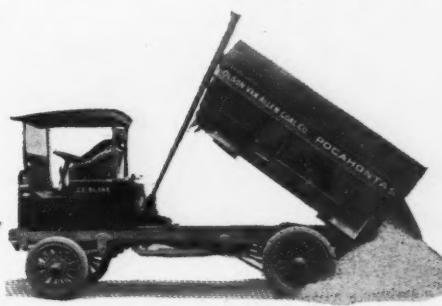
United Model ESW, 5-ton Chassis. \$3500.



Bulley Model A, Tractor, Chassis, \$3400.
Made by Mercury Mfg. Co.

Commercial Cars

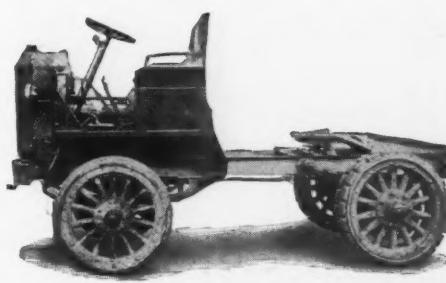
Manufacture	Company	Ignition	Spark-Plug Size	Lubrication	Clutch	Drive	Transmission	Speeds Forward	Type Rear Axle	Front Tires	Rear Tires	Steering Wheel	Brake and Gear Levers	Wheelbase	Engine Starter	% Total Weight on Rear Wheels
	Avery Co., Peoria, Ill.	E	S	F	D	C	S	3	D	38x6	38x5D	R	C	128	..	:
	Harvey Motor Truck Works, Harvey, Ill.	EE	SS	SS	C	W	SS	4	S	36x5	40x6D	L	C	150	..	80
	C	C	W	SS	C	W	SS	4	S	36x5	40x6D	L	C	168	..	80
	Kleiber & Co., Inc., San Francisco, Cal.	B	S	SF	D	W	S	4	S	36x6	40x6D	R	C	170	..	75
	Lewis-Hall Iron Wks., Detroit, Mich.	B	S	SF	D	C	P	4	D	....	....	..	C	...	..	80
	Old Reliable Motor Truck Co., Chicago, Ill.	B	SS	F	D	C	S	3	D	36x6	36x6D	L	C	126	..	60
		B	SS	F	D	W	S	4	S	36x6	40x6D	R	C	165	..	80
	Pacific Metal Products Co., Torrance, Cal.	SD	S	SF	C	C	S	4	D	36x6	42x6D	R	R	175	..	75
		SD	S	SF	C	C	S	4	D	36x6	42x6D	R	R	160	..	75
	Stegeman Motor Car Co., Milwaukee, Wis.	WS	..	SF	D	W	S	3	F	36x5	40x6D	L	C	170	WS	80
	Sterling Motor Truck Co., Milwaukee, Wis.	E	S	F	D	W	S	3	S	36x5	40x6D	L	C	178	X	90
		E	S	F	D	C	S	3	D	36x5	40x6D	L	C	178	X	90
	Standard Motor Truck Co., Detroit, Mich.	E	S	SS	D	C	S	3	D	36x5	40x6D	L	C	168	..	70
		E	S	SS	D	C	S	4	D	36x5	40x6D	L	C	168	..	70
	United Motor Truck Co., Grand Rapids, Mich.	MG	S	F	D	W	S	4	S	36x6	40x6D	R	R	144	..	86
	Viall Motor Car Co., Chicago, Ill.	B	S	S	D	C	S	3	D	36x5	36x5D	R	R	144	..	75



Mogul Model M, 6-ton Pump, Chassis, \$3800.

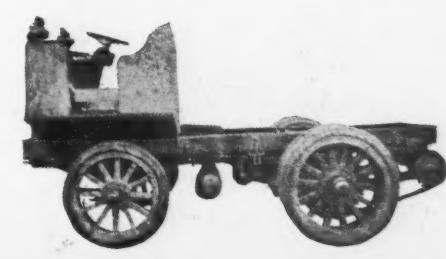


Old Reliable 5-ton Special Storage Body, Chassis, \$4250.



Dominion 6-ton Tractor, \$3800 with Stake Body.

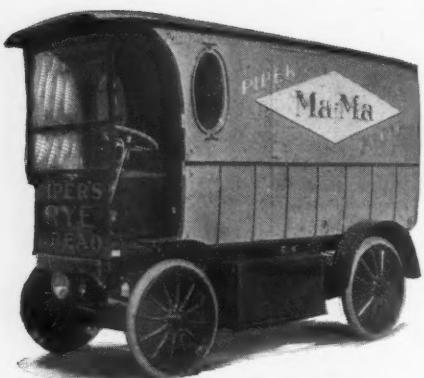
Commercial Cars																		
T	B	MG	S	SF	Kissel Motor Car Co., Hartford, Wis.													
					C	C	S	4	D	36x6	40x6D	L	C	168				
H	H	B	B	SF	Mogul Motor Truck Co., St. Louis, Mo.													
					D	C	P	3	D	....	....	R	R	142		
H	B	B	S	F	Old Reliable Motor Truck Co., Chicago, Ill.							R	R	181				
					D	C	S	3	D	36x6	40x7D	L	C	126				
P	B	E	S	SF	Service Motor Truck Co., Wabash, Ind.													
					C	C	S	4	D	36x6	40x6D	L	C	171				
X																		
Commercial Cars																		
T	B	B	S	F	Old Reliable Motor Truck Co., Chicago, Ill.													
					D	C	S	4	D	36x6	40x7	R	R	126				
T	T	E	S	F	Sterling Motor Truck Co., Milwaukee, Wis.													
					D	W	S	3	S	36x5	40x7D	L	C	178				
T	T	E	S	F	Old Reliable Motor Truck Co., Milwaukee, Wis.							L	C	178				
					D	C	S	3	D	36x5	40x7D	X	X	90				



Standard Model D, 10 ton Tractor, \$4200.

Gasoline Tractors

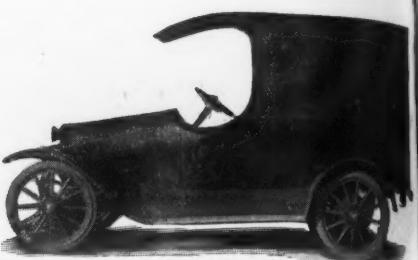
H.	ME	1/2	SF	Couple Gear	Freight	Wheel	Co., Grand	Rapids,	Mich.						
T.	L.	C	S	D	W	S	3	S	36x5D	...	R	C	104	..	70
				Dominion	Motor	Truck	Co.,	Detroit,	Mich.						
H.	MG	1/2	F	C	C	S	3	D	36x4	36x4D	L	C	90	..	30
				Mercury	Mfg.	Co.,	Chicago,	Ill.							
C.	B.	S	S	D	C	IC	3	D	36x5	36x5D	R	R	71	..	..
C.	B.	S	S	D	C	IC	3	D	36x5	40x6D	R	R	72	..	40
T.	B.	B.	S	Old	Reliable	Motor	Truck	Co.,	Chicago,	Ill.					
				D	C	S	3	D	36x5	40x6	R	R	108	..	80



Walker Model M, 1000-lb. Panel.



G. M. C. Model 3, 1 1/2-ton Stake, Chassis without Battery, \$1450. Chassis with Edison Battery, \$2650; with Exide Battery, \$1930. Made by General Motors Truck Co.



Eagle Model 3-A, 1000-lb. Panel, \$900. Also Panel, \$750; Stake, \$700; Flareboard, \$700. Above prices are without battery; U. S. L. Battery, \$150 extra.



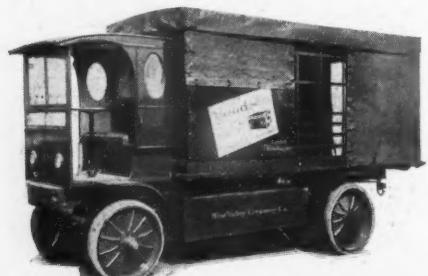
G. M. C. 1-ton Panel, Chassis without Battery, \$1300. Chassis with Edison Battery, \$2305; with Exide Battery, \$1740.



G. M. C. Model 12, 6-ton Tank, Chassis without Battery, \$2500. Chassis with Edison Battery, \$4840; with Exide Battery, \$3340. Made by General Motors Truck Co.



Walker Model D, 3-ton Special Stake.



Walker Model E, 4-ton Covered Stake.

750 Pound Electric

Model	Chassis Weight	Chassis Price	Styles of Stock Bodies Furnished	Height of Loading Platform	Maximum Speed	Mileage Per Charge	Motor Type	Controller Type	Speeds Forward
.....	1300	Connersville 600 P, S	Connersville, Ind.	14	50	S	W		

1000 Pound Electric

3A	2000	Eagle Electric Automobile Co., Inc., Detroit, Mich. P, S, FB	15	75	S	CD
1	2520	General Motors Truck Co., Pontiac, Mich.	33	13	53	GG
1	2520	.....	33	13	53	GG
1	2520	.....	33	13	53	GG
M	2200	Walker Vehicle Co., Chicago, Ill.	34	15	75	W
.....	3250	Waverley Co., Indianapolis, Ind. P	33	14	55	C

1500 Pound Electric

E-1600	1740	Los Angeles Creamery Auto & Machine Works, Los Angeles, Cal. 1925	31	13	55	S	CH
2	2760	General Motors Truck Co., Pontiac, Mich.	33	11	50	GG	5
2	2760	.....	33	11	50	GG	5
2	2760	.....	33	11	50	GG	5
K	2600	Walker Vehicle Co., Chicago, Ill.	35	14	75	W	5
.....	4600	Waverley Co., Indianapolis, Ind. E	43	11	50	D	4

1 1/2 Ton Electric

3	3002	General Motors Truck Co., Pontiac, Mich.	33	10	50	S	G
3	3002	.....	33	10	50	S	G
3	3002	.....	33	10	50	S	G

2 Ton Electric

4	3975	General Motors Truck Co., Pontiac, Mich.	37	9	50	S	G
4	3975	.....	37	9	50	S	G
4	3975	.....	37	9	50	S	G
L	3500	Walker Vehicle Co., Chicago, Ill.	36	13	75	S	W
.....	6400	Waverley Co., Indianapolis, Ind. E	44	9	45	S	D

3 Ton Electric

D	4500	Walker Vehicle Co., Chicago, Ill.	39	12	60	S	W
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3 1/2 Ton Electric

7	5000	General Motors Truck Co., Pontiac, Mich.	37	8	41	S	G
7	5000	37	8	41	S	G
7	5000	37	8	41	S	G

4 Ton Electric

E	5500	Walker Vehicle Co., Chicago, Ill.	40	11	60	S	W
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5 Ton Electric

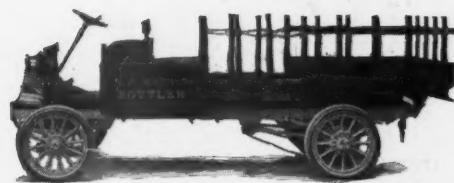
10	6125	General Motors Truck Co., Pontiac, Mich.	39	7	42	S	G
10	6125	39	7	42	S	G
10	6125	.....	39	7	42	S	G
N	6000	Walker Vehicle Co., Chicago, Ill.	40	10	60	S	W

6 Ton Electric

12	6720	General Motors Truck Co., Pontiac, Mich.	39	7	38	S	G
12	6720	.....	39	7	38	S	G
12	6720	.....	39	7	38	S	G



Connersville 750-lb. Flareboard, \$750.
Also Platform, \$750.



G. M. C. Model 1, 1000-lb. Stake, Chassis without
battery, \$1200.
Chassis with Edison Battery, \$2010; with Exide
Battery, \$1580.
Made by General Motors Truck Co.



G. M. C. Model 4, 2-ton Stake, Chassis without
battery, \$1620.
Chassis with Edison Battery, \$2880; with Exide
Battery, \$2230.
Made by General Motors Truck Co.

Commercial Cars

Speeds Forward	Drive	Rear Axle	Front Tires	Rear Tires	Steering and Control	Wheelbase	% Total Weight on Rear Wheels
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B Connersville Buggy Co., Connersville, Ind.
S 2 2

Commercial Cars

W Eagle Electric Automobile Co., Inc., Detroit, Mich.
F 32x3½ 32x3½ L 110 50
S, C General Motors Truck Co., Pontiac, Mich.
D 32x3 32x3½ L 94 60
S, C D 32x3 32x3½ L 106 60
S, C D 32x3 32x3½ L 124 60
BD Walker Vehicle Co., Chicago, Ill.
.. 34x3 36x3½ L 90 67
S Waverley Co., Indianapolis, Ind.
F 34x2½ 34x2½ L 90 60

Commercial Cars

W Los Angeles Creamery Auto & Machine Works, Los Angeles, Cal.
F 3½ 3½ L 90 70

Commercial Cars

S, C General Motors Truck Co., Pontiac, Mich.
D 32x3½ 32x4 L 104 63
S, C D 32x3½ 32x4 L 118 63
S, C D 32x3½ 32x4 L 136 63
BD Walker Vehicle Co., Chicago, Ill.
.. 34x3½ 36x4 L 92 67
S, C Waverley Co., Indianapolis, Ind.
D 35x4 35x5 L 104 60

Commercial Cars

S, C General Motors Truck Co., Pontiac, Mich.
D 32x4 32x5 L 112 64
S, C D 32x4 32x5 L 130 64
S, C D 32x4 32x5 L 148 64

Commercial Cars

S, C General Motors Truck Co., Pontiac, Mich.
D 32x4 36x3½D L 120 68
S, C D 32x4 36x3½D L 130 68
S, C D 32x4 36x3½D L 156 68
BD Walker Vehicle Co., Chicago, Ill.
.. 38x4 38x6 L 107 67
S, C Waverley Co., Indianapolis, Ind.
D 37x5 37x4D L 114 60

Commercial Cars

BD Walker Vehicle Co., Chicago, Ill.
.. 36x5 38x5D L 126 67

Commercial Cars

S, C General Motors Truck Co., Pontiac, Mich.
D 32x5 36x5D L 132 69
S, C D 32x5 36x5D L 150 69
S, C D 32x5 36x5D L 168 69

Commercial Cars

BD Walker Vehicle Co., Chicago, Ill.
.. 36x6 38x6D L 130 67

Commercial Cars

S, C General Motors Truck Co., Pontiac, Mich.
D 36x6 36x6D L 148 70
S, C D 36x6 36x6D L 166 70
S, C D 36x6 36x6D L 184 70

BD Walker Vehicle Co., Chicago, Ill.
.. 36x7 38x6D L 130 67

Commercial Cars

S, C General Motors Truck Co., Pontiac, Mich.
D 36x6 36x7D L 156 72
S, C D 36x6 36x7D L 174 72
S, C D 36x6 36x7D L 192 72



G. M. C. Model 7, 1½-ton Covered Stake, Chassis without Battery, \$2000.
Chassis with Edison Battery, \$3560; with Exide Battery, \$2600.

Made by General Motors Truck Co.



G. M. C. Model 10, 5-ton Brewery Truck, Chassis without Battery, \$2350.
Chassis with Edison Battery, \$4330; with Exide Battery, \$3060.

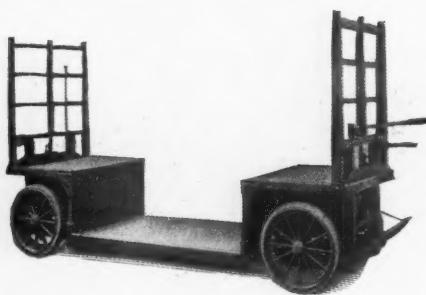
Made by General Motors Truck Co.



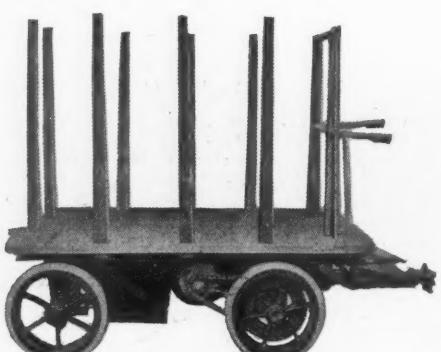
Walker Model L, 2-ton Canopy Top.



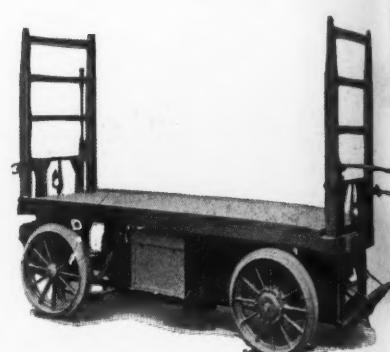
Walker Model K, 1-ton Panel.



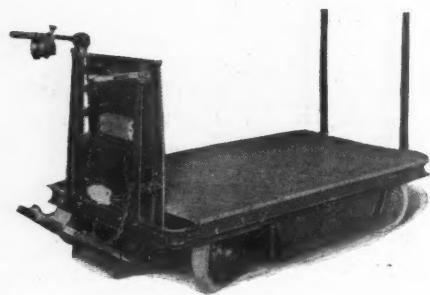
Elwell-Parker Model DD, Drop Frame Baggage and Shop, 2 ton Industrial Truck.



Orenstein-Arthur Koppel, Type A, C, 1 1/2 ton Industrial Truck.



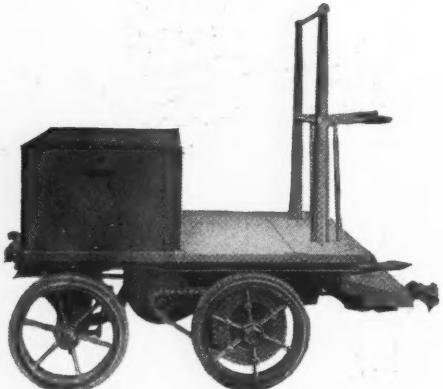
Elwell-Parker Model SC, Straight Frame Baggage and Shop, 2 ton Industrial Truck.



Elwell-Parker Model IB, 1/2 ton Factory Truck.

1 1/2 Ton Industrial Trucks

Model	Weight	Price	Load Platform			Maximum Speed (Loaded)	Motor Type	Speeds Forward	Speeds Reverse
			Height	Length	Width				
Orenstein-Arthur Koppel Co., Koppel, Pa.									
A	1800	...	23	63	41	5	..	..	..
B	2035	...	23	60	41	7	..	..	..
Elwell-Parker Electric Co., Cleveland, Ohio.									
IB	2600	...	52	72	36	4 1/2	S	3	..



Orenstein-Arthur Koppel Model E, Industrial Tractor.



Automatic Transportation Model S, Industrial Tractor.

2 Ton Industrial Trucks

C. W. Hunt Co., Inc., West New Brighton, N. Y.

2200	...	23	90	48	7
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Orenstein-Arthur Koppel Co., Koppel, Pa.

C	1985	...	23	68	41	5
D	2185	...	23	81	41	7

Automatic Transportation Co., Buffalo, N. Y.

E	2350	...	20	79	41	8	..	4
G	2300	...	20	72	36	8	..	4
D	1850	...	20	62	36	5 1/2	..	3
L	2450	...	14	...	..	5	..	3
H	2300	...	12	65	41	6	..	3
Baggage	3200	...	36	144	41	7	..	3
Baggage	3200	...	10%	74	41	7	..	3

Elwell-Parker Electric Co., Cleveland, Ohio.

DD	3200	...	10 1/2	...	44	6	S	3
GG	3500	...	11	...	..	5 1/2	S	3
SA	3000	...	33	137	44	6	S	3
SC	2700	...	33	108	38	5 1/2	S	3
SE	2800	...	34	137	44	5 1/2	S	3
FB	1900	...	11	57	44	6	S	3
WA	2100	...	17	94	37	6	S	3
ID	2000	...	18	89	37	4 1/2	S	3
IV	1900	...	18	75	46	4 1/2	..	3
EB	2200	...	11	50	44	6	S	3
EC	2300	...	11	60	26	6	S	3
EE	2300	...	17	60	37	6	S	3
EF	2300	...	17	60	26	6	S	3

Industrial Tractors

Mercury Mfg. Co., Chicago, Ill.

Z	1200	980	18	8	W	3
U	3300	1550	21	6	W	3

Orenstein-Arthur Koppel Co., Koppel, Pa.

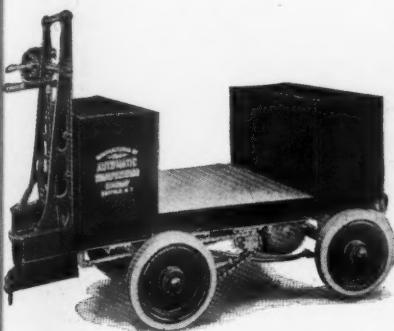
E	2275	...	22	7
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Automatic Transportation Co., Buffalo, N. Y.

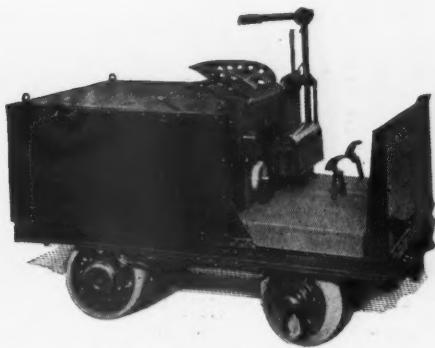
D	2600	...	20	5 1/2	..	3
Mill	3000	...	20	5 1/2	..	3
S	2900	...	20	8	..	3
AA	3600	...	..	..	..	5	..	4
MM	6500	...	..	..	..	6	..	4

Elwell-Parker Electric Co., Cleveland, Ohio.

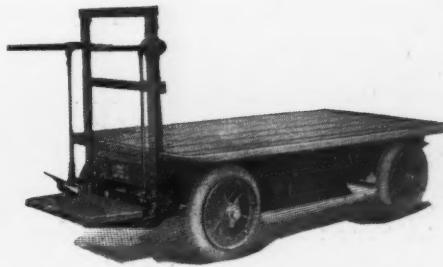
F	2400	...	..	32	44	6 1/2	..	3
I	2900	...	..	..	..	6	..	3



Automatic Transportation Model D, Industrial Tractor.



Elwell-Parker Model I, Freight and Mill, Industrial Tractor.



Hunt Standard, 2 ton Industrial Truck.

1½ Ton Industrial Trucks

Front Axle	Rear Axle	Turning Radius	Steering Type	Controller Type	Wheels	Wheelbase	Tread	Front Tires	Rear Tires

Orenstein-Arthur Koppel Co., Koppel, Pa.

..	..	..	..	43	34	20x3	20x3
..	52	34	20x3	20x3

Elwell-Parker Electric Co., Cleveland, Ohio.

F	6½	4	D	..	55	25	15x3½	15x3½
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2 Ton Industrial Trucks

C. W. Hunt Co., Inc., West New Brighton, N. Y.

..	60	40	20x3½	20x3½
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Orenstein-Arthur Koppel Co., Koppel, Pa.

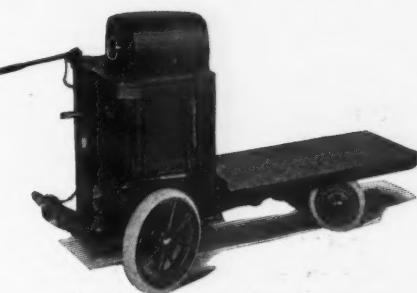
..	48	34	20x3½	20x3½
..	61	34	20x3½	20x3½

Automatic Transportation Co., Buffalo, N. Y.

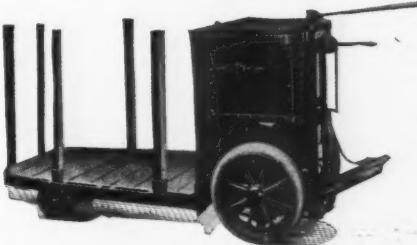
..	..	..	..	52	34	.....	.....
..	..	..	..	52	34	.....	.....
..	..	..	..	38	33	.....	.....
..	4	..	..	51	30	.....	.....
..	4	..	..	51	30	.....	.....
..	4	..	..	84	30	.....	.....
..	4	..	..	107	34	.....	.....

Elwell-Parker Electric Co., Cleveland, Ohio.

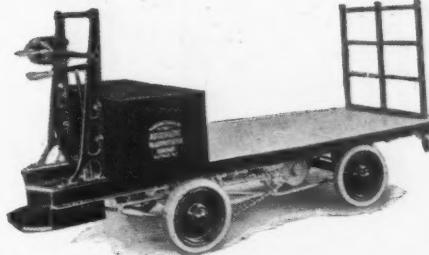
I	I	16	4	D	S	114	40	27½x3½	27½x3½
I	I	16	4	D	S	116	40	27½x3½	27½x3½
I	I	12	4	D	S	85	40	27½x3½	27½x3½
I	I	10	4	D	S	78	34	27½x3½	27½x3½
I	I	12	4	D	S	85	40	27½x3½	27½x3½
I	I	7	4	D	..	53	34	21½x3½	10½x5
I	I	7½	4	D	..	78	34	21½x3½	15x3½
F	F	7½	4	D	..	67	25	15x3½	15x3½
F	F	6½	4	..	..	55	25	15x3½	15x3½
I	I	7	4	D	..	53	34	21½x3½	10½x5
I	I	7	4	D	..	53	34	21½x3½	10½x5
I	I	7	4	D	..	53	34	21½x3½	10½x5
I	I	7	4	D	..	53	34	21½x3½	15x3½
I	I	..	4	D	..	53	34	21½x3½	15x3½



Elwell-Parker Model EF, Elevating Platform, 2 ton Industrial Truck.



Elwell-Parker Model FB, Freight and Factory, 2 ton Industrial Truck.



Automatic Transportation Model E & G, 2 ton Industrial Truck.

Industrial Tractors

Mercury Mfg. Co., Chicago, Ill.

S	41	..	15x3½	20½x3½
S	60	..	22x3½	27½x4½

Orenstein-Arthur Koppel Co., Koppel, Pa.

..	30	34
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Automatic Transportation Co., Buffalo, N. Y.

..	38	34
..	38	34
..	36	34
..	28	36
..	32	42

Elwell-Parker Electric Co., Cleveland, Ohio.

I	7	4	..	..	53	34	22x4½	10½x5
F	5	4	..	..	38	25	15x3½	5x5



Automatic Transportation Model L, 2 ton Elevating Platform Industrial Truck.

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2250	4 27	Detroit-Wyandotte Motor	24
2500	4 26	Reo Motor Truck Co.	26
2750	4 27	Continental Motor Truck	24
3000	4 27	Service Motor Truck Co.	24
3250	4 27	Universal Service Co.	24
3500	4 27	Wm. Landshaft & Sons	24
3750	4 27	Wichita Falls Motor Co.	24
4000	4 27	W. E. Wilcox Motor Co.	20
4250	4 27	W. E. Wilcox Motor Co.	24
4500	4 27	W. E. Wilcox Motor Co.	24
4750	4 27	W. E. Wilcox Motor Co.	24
5000	4 27	W. E. Wilcox Motor Co.	24
5250	4 27	W. E. Wilcox Motor Co.	24
5500	4 27	W. E. Wilcox Motor Co.	24
5750	4 27	W. E. Wilcox Motor Co.	24
6000	4 27	W. E. Wilcox Motor Co.	24
6250	4 27	W. E. Wilcox Motor Co.	24
6500	4 27	W. E. Wilcox Motor Co.	24
6750	4 27	W. E. Wilcox Motor Co.	24
7000	4 27	W. E. Wilcox Motor Co.	24
7250	4 27	W. E. Wilcox Motor Co.	24
7500	4 27	W. E. Wilcox Motor Co.	24
7750	4 27	W. E. Wilcox Motor Co.	24
8000	4 27	W. E. Wilcox Motor Co.	24
8250	4 27	W. E. Wilcox Motor Co.	24
8500	4 27	W. E. Wilcox Motor Co.	24
8750	4 27	W. E. Wilcox Motor Co.	24
9000	4 27	W. E. Wilcox Motor Co.	24
9250	4 27	W. E. Wilcox Motor Co.	24
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9750	4 27	W. E. Wilcox Motor Co.	24
10000	4 27	W. E. Wilcox Motor Co.	24
10250	4 27	W. E. Wilcox Motor Co.	24
10500	4 27	W. E. Wilcox Motor Co.	24
10750	4 27	W. E. Wilcox Motor Co.	24
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11250	4 27	W. E. Wilcox Motor Co.	24
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11750	4 27	W. E. Wilcox Motor Co.	24
12000	4 27	W. E. Wilcox Motor Co.	24
12250	4 27	W. E. Wilcox Motor Co.	24
12500	4 27	W. E. Wilcox Motor Co.	24
12750	4 27	W. E. Wilcox Motor Co.	24
13000	4 27	W. E. Wilcox Motor Co.	24
13250	4 27	W. E. Wilcox Motor Co.	24
13500	4 27	W. E. Wilcox Motor Co.	24
13750	4 27	W. E. Wilcox Motor Co.	24
14000	4 27	W. E. Wilcox Motor Co.	24
14250	4 27	W. E. Wilcox Motor Co.	24
14500	4 27	W. E. Wilcox Motor Co.	24
14750	4 27	W. E. Wilcox Motor Co.	24
15000	4 27	W. E. Wilcox Motor Co.	24
15250	4 27	W. E. Wilcox Motor Co.	24
15500	4 27	W. E. Wilcox Motor Co.	24
15750	4 27	W. E. Wilcox Motor Co.	24
16000	4 27	W. E. Wilcox Motor Co.	24
16250	4 27	W. E. Wilcox Motor Co.	24
16500	4 27	W. E. Wilcox Motor Co.	24
16750	4 27	W. E. Wilcox Motor Co.	24
17000	4 27	W. E. Wilcox Motor Co.	24
17250	4 27	W. E. Wilcox Motor Co.	24
17500	4 27	W. E. Wilcox Motor Co.	24
17750	4 27	W. E. Wilcox Motor Co.	24
18000	4 27	W. E. Wilcox Motor Co.	24
18250	4 27	W. E. Wilcox Motor Co.	24
18500	4 27	W. E. Wilcox Motor Co.	24
18750	4 27	W. E. Wilcox Motor Co.	24
19000	4 27	W. E. Wilcox Motor Co.	24
19250	4 27	W. E. Wilcox Motor Co.	24
19500	4 27	W. E. Wilcox Motor Co.	24
19750	4 27	W. E. Wilcox Motor Co.	24
20000	4 27	W. E. Wilcox Motor Co.	24
20250	4 27	W. E. Wilcox Motor Co.	24
20500	4 27	W. E. Wilcox Motor Co.	24
20750	4 27	W. E. Wilcox Motor Co.	24
21000	4 27	W. E. Wilcox Motor Co.	24
21250	4 27	W. E. Wilcox Motor Co.	24
21500	4 27	W. E. Wilcox Motor Co.	24
21750	4 27	W. E. Wilcox Motor Co.	24
22000	4 27	W. E. Wilcox Motor Co.	24
22250	4 27	W. E. Wilcox Motor Co.	24
22500	4 27	W. E. Wilcox Motor Co.	24
22750	4 27	W. E. Wilcox Motor Co.	24
23000	4 27	W. E. Wilcox Motor Co.	24
23250	4 27	W. E. Wilcox Motor Co.	24
23500	4 27	W. E. Wilcox Motor Co.	24
23750	4 27	W. E. Wilcox Motor Co.	24
24000	4 27	W. E. Wilcox Motor Co.	24
24250	4 27	W. E. Wilcox Motor Co.	24
24500	4 27	W. E. Wilcox Motor Co.	24
24750	4 27	W. E. Wilcox Motor Co.	24
25000	4 27	W. E. Wilcox Motor Co.	24
25250	4 27	W. E. Wilcox Motor Co.	24
25500	4 27	W. E. Wilcox Motor Co.	24
25750	4 27	W. E. Wilcox Motor Co.	24
26000	4 27	W. E. Wilcox Motor Co.	24
26250	4 27	W. E. Wilcox Motor Co.	24
26500	4 27	W. E. Wilcox Motor Co.	24
26750	4 27	W. E. Wilcox Motor Co.	24
27000	4 27	W. E. Wilcox Motor Co.	24
27250	4 27	W. E. Wilcox Motor Co.	24
27500	4 27	W. E. Wilcox Motor Co.	24
27750	4 27	W. E. Wilcox Motor Co.	24
28000	4 27	W. E. Wilcox Motor Co.	24
28250	4 27	W. E. Wilcox Motor Co.	24
28500	4 27	W. E. Wilcox Motor Co.	24
28750	4 27	W. E. Wilcox Motor Co.	24
29000	4 27	W. E. Wilcox Motor Co.	24
29250	4 27	W. E. Wilcox Motor Co.	24
29500	4 27	W. E. Wilcox Motor Co.	24
29750	4 27	W. E. Wilcox Motor Co.	24
30000	4 27	W. E. Wilcox Motor Co.	24
30250	4 27	W. E. Wilcox Motor Co.	24
30500	4 27	W. E. Wilcox Motor Co.	24
30750	4 27	W. E. Wilcox Motor Co.	24
31000	4 27	W. E. Wilcox Motor Co.	24
31250	4 27	W. E. Wilcox Motor Co.	24
31500	4 27	W. E. Wilcox Motor Co.	24
31750	4 27	W. E. Wilcox Motor Co.	24
32000	4 27	W. E. Wilcox Motor Co.	24
32250	4 27	W. E. Wilcox Motor Co.	24
32500	4 27	W. E. Wilcox Motor Co.	24
32750	4 27	W. E. Wilcox Motor Co.	24
33000	4 27	W. E. Wilcox Motor Co.	24
33250	4 27	W. E. Wilcox Motor Co.	24
33500	4 27	W. E. Wilcox Motor Co.	24
33750	4 27	W. E. Wilcox Motor Co.	24
3			

Gasoline and Electric Commercial Cars Indexed According to Chassis Price (Continued From Page 42)

*Indicates Price Complete With Body

Price Cyl. H.P.	Maker	Page	Price Cyl. H.P.	Maker	Page	Price Cyl. H.P.	Maker	Page
2250	4 23	Hewitt-Ludlow Auto Co. ....30	3000	4 29	Hewitt-Ludlow Auto Co. ....34	4200	4 44	Detroit-Wyandotte Motor
2250	4 27	Mogul Motor Truck Co. ....30	3000	4 29	Service Motor Truck Co. ....34	4250	4 44	Truck Co. ....34
2350	4 23	Hewitt-Ludlow Auto Co. ....30	3000	4 23	Signal Motor Truck Co. ....34	4250	4 36	Kleiber & Co., Inc. ....36
2450	4 27	DeKalb Wagon Co. ....30	3000	6 34	Stegeman Motor Car Co. ....31	4250	4 36	Old Reliable Motor Truck Co. ....36
2500	6 34	Gerlinger Motor Car Co. ....30	3250	4 29	Wichita Falls Motor Co. ....34	4500	4 44	Avery Co. ....36
2500	4 32	Pacific Metal Products Co. ....32	3200	4 32	General Motors Truck Co. ....32	4500	4 44	Pacific Metal Products Co. ....36
2500	6 29	Stegeman Motor Car Co. ....32	3300	4 32	Kleiber & Co., Inc. ....34	4500	4 32	Sterling Motor Truck Co. ....36
2550	4 32	Moreland Motor Truck Co. ....30	3350	4 32	General Motors Truck Co. ....32	4950	4 44	Pacific Metal Products Co. ....36
2750	4 27	Kleiber & Co., Inc. ....30	3350	4 36	South Bend Motor Car Works ....34			
3 Ton Commercial Cars.								
Price Cyl. H.P.	Maker	Page	3350	4 32	Velie Motor Vehicle Co. ....34			
2400	4 29	Republic Motor Truck Co. ....32	3400	4 36	Garford Motor Truck Co. ....32			
2450	4 31	Acme Motor Truck Co. ....32	3400	4 29	Sterling Motor Truck Co. ....34			
2500	4 32	Sandow Truck Co. ....32						
2750	4 32	Kissel Motor Car Co. ....32						
3000	4 32	Sandow Truck Co. ....32						
3150	4 32	Pacific Metal Products Co. ....32						
3200	4 36	Avery Co. ....32						
3200	4 32	Detroit-Wyandotte Motor Truck Co. ....32						
3250	4 29	Old Reliable Motor Truck Co. ....32						
3300	4 30	Mais Motor Truck Co. ....32						
3400	4 32	Packard Motor Car Co. ....32						
3400	4 26	Universal Service Co. ....32						
3600	4 32	Diamond T Motor Car Co. ....32						
4000	4 36	Four Wheel Drive Auto Co. ....32						
6300	4 29	Duplex Power Car Co. ....32						
6500	4 29	Duplex Power Car Co. ....32						
3½ Ton Commercial Cars.								
Price Cyl. H.P.	Maker	Page						
2000	Electric.	General Motors Truck Co. ....38						
2550	4 32	Mogul Motor Truck Co. ....34						
2800	4 32	Federal Motor Truck Co. ....32						
2800	4 32	Lewis-Hall Iron Works ....34						
2800	4 32	Standard Motor Truck Co. ....34						
2850	4 32	Standard Motor Truck Co. ....34						
2900	4 36	United Motor Truck Co. ....34						
2900	4 29	H. E. Wilcox Motor Co. ....34						
2950	4 29	Harvey Motor Truck Works. ....34						
3000	4 32	Continental Motor Truck Co. ....32						
5 Ton Commercial Cars.								
Price Cyl. H.P.	Maker	Page						
2350	Electric.	General Motors Truck Co. ....38						
3400	4 32	Lewis-Hall Iron Works ....36						
3400	4 32	Standard Motor Truck Co. ....36						
3500	4 41	United Motor Truck Co. ....36						
3500	4 32	Viall Motor Car Co. ....36						
3650	4 32	Harvey Motor Truck Works. ....36						
3850	4 32	General Motors Truck Co. ....34						
3900	4 32	General Motors Truck Co. ....34						
4000	4 32	Continental Motor Truck Co. ....34						
4000	6 34	Stegeman Motor Car Co. ....36						
6 Ton Commercial Cars.								
Price Cyl. H.P.	Maker	Page						
4200	4 44	Detroit-Wyandotte Motor						
4250	4 44	Truck Co. ....34						
4250	4 36	Kleiber & Co., Inc. ....36						
4500	4 44	Old Reliable Motor Truck Co. ....36						
4500	4 44	Avery Co. ....36						
4500	4 32	Pacific Metal Products Co. ....36						
4950	4 44	Sterling Motor Truck Co. ....36						
7 Ton Commercial Cars.								
Price Cyl. H.P.	Maker	Page						
4750	4 42	Old Reliable Motor Truck Co. ....36						
4750	4 36	Sterling Motor Truck Co. ....36						
7½ Ton Commercial Cars.								
Price Cyl. H.P.	Maker	Page						
5000	4 53	Couple Gear Freight Wheel Co. ....36						
Gasoline Tractors.								
Price Cyl. H.P.	Maker	Page						
3400	4 29	Mercury Mfg. Co. ....36						
3450	4 36	Standard Tractor Co., Inc. ....36						
3800*	4 36	Dominion Motor Truck Co. ....36						
4200	4 36	Standard Tractor Co., Inc. ....36						
4250	4 42	Old Reliable Motor Truck Co. ....36						
5500	4 53	Couple Gear Freight Wheel Co. ....36						

LAST HALF OF REVIEW. FIRST HALF WAS IN JANUARY ISSUE

DEALS LOST BY A HAIR

"One deal I lost by a whistle blowing at the wrong time," says a well-known Western dealer. "There was a deal on for a large order in a company managed by a father and son. The old gentleman had turned the matter of buying trucks over to his son, whom I had educated to a point where he was favorable to our truck. On the day he expected to close he made an appointment with me and one for a few minutes later with my principal competitor. I was on the job on time and my competitor was there ahead of his time and while I was talking to the son he was talking to the old gentleman. It seems, although I did not know it at the time, that the son had agreed to go into the factory for some purpose not connected with the trucks, to see his father, when the whistle blew. Just as we were making definite arrangements for me to come around the following morning and deliver the first truck, and I was all ready to have him sign the contract, the whistle blew, and he hurriedly excused himself for a minute and went into the office. When he came out he had cooled off and said he wouldn't do anything further now and the following morning the order was given to my competitor instead of myself. He had convinced the old gentleman while I was working on the son and when the boy came in his father switched him. If the whistle had blown five minutes later I would have had the name on the dotted line and then the deal would have been mine."

"I had another fellow all prepared to buy a truck when the telephone rang as he was ready to sign. He answered it, and after a conversation which gave me no clue to what was coming in over the wire, he turned to me and said shortly that he would have to postpone action on the truck. He never has bought a truck of anybody, and I have never found out what he heard over the telephone.

"These experiences prove that in every deal, there is a time to close, and when it comes is the time to get the signature."

POTASH SHORTAGE AFFECTS SOAP MAKERS

We are informed that, owing to the European war, there is a shortage of potash, which is largely used in the manufacture of liquid and soft automobile soaps. There is but very little of this material in the country, and the price is high. There seems to be no good reason why potash cannot be made in this country as well as in Europe. Here is another opportunity for Americans to establish another industry, which doubtless would survive the war.

CORRECTIONS: EASTERN REVIEW

In the Eastern section of the Review, published in January, we listed the cars made by the Autocar Co., Ardmore, Pa., as 1½ tons capacity. The company informs us that these cars should also be listed as 2-ton vehicles. The Autocar is really a 1½- to 2-

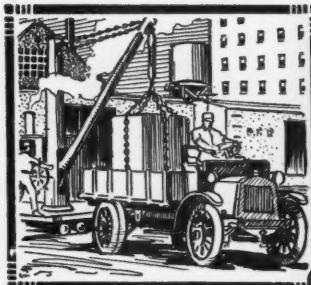
ton truck, the 2-ton capacity being featured in connection with coal dealers and contractors. In selling the truck for 2-ton work, heavier springs are fitted and the guarantee applies just as in the case of the 1½ ton capacity.

In listing the 3½-ton truck made by the Atterbury Motor Car Co., Buffalo, N. Y., in the price index on page 38 of the January issue, this line was put on the end of the 3-ton list instead of at the head of the 3½-ton list where it belongs.

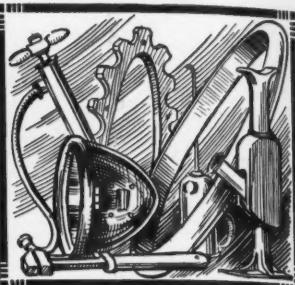
Bowser Oil Tank & Pump Works, Ft. Wayne, Ind., has promoted E. J. Little, formerly manager of the Ft. Wayne district, to the management of the New York office, succeeding H. C. Carpenter, who has taken charge of the Atlanta, Ga., office. The Ft. Wayne district has been divided into the Michigan, Ohio and Indiana districts, and L. L. Walker, formerly manager of the Philadelphia district, has been placed in charge of the Ohio territory. A. S. Bowser, secretary of the company, will look after the Michigan sales district, and J. W. Burrows will have charge of the Indiana district.

The McGraw Tire and Rubber Co., East Palestine, O., has just announced a new twin solid S.A.E. American type tire, which is designed especially for heavy duty service. Details of this new tire will be published in an early issue.

L. G. Schoepfle Co., Buffalo, N. Y., has taken over the entire output of the Columbia Truck and Trailer Company, of Pontiac, Mich., and is looking for traveling representatives to establish dealers in the United States.



TRUCK ACCESSORIES AND APPLIANCES



NEW MOSLER PRIMING PLUG

The new ramrod "Superior" priming plug just placed on the market by A. R. Mosler & Co., New York City, is unique in that the central electrode is removed for priming purposes and the priming liquid can be poured directly into the cup-shaped aper-



The Mosler "Ramrod" Priming Plug



The Mosler "Ramrod" Priming Plug in Operation

This plug is made in a size to prime any car and is not confined to overhead engines

ture at the top of the plug. The center electrode is removed by simply giving the knurled cap a downward push and a quarter turn.

The plug can be had in all standard sizes, and in special $\frac{1}{2}$ in. and $\frac{3}{8}$ in. sizes. Price is \$1.

The CCJ brings greatest returns to advertisers because of largest circulation among quantity buyers

THE PETELER AUTO JACK

This is a very substantially built jack, the whole mechanism being enclosed in a steel case. A feature is a round lifting bar that turns freely so that wear on the steps is distributed. The power is transmitted from the handle directly to the lifting bar. The pawls are made of hardened steel.

A solid pressed steel shell of generous dimensions forms a base into which is fitted a reinforced wooden block.

An automatic drop bar is one of the ingenious features of this jack. When it is desired to lower the car it is only necessary to hit or press the button with the side of the jack and it flies to reverse. The lifting



The Peteler Jack

This view shows how simply power is transmitted from the handle directly to the lifting bar.

bar then drops automatically. Prices of the jack are \$3.50 with regular head, and \$4 with special head for cars with low-hung axles. Sole licensees, Moreau & Pratt, Inc., New York City.



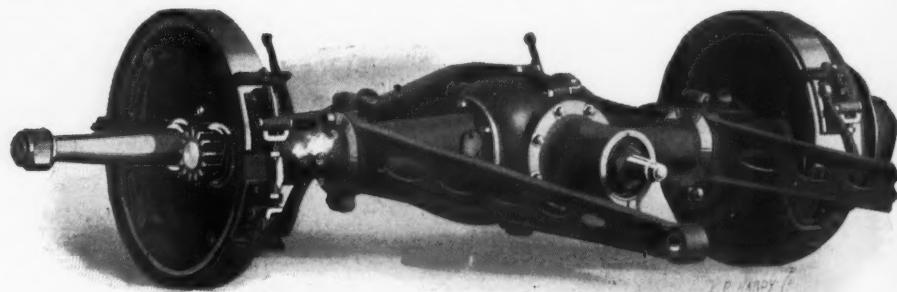
Herman Double Auto-Truck Chains

This illustration shows the truck tire chains made by the Herman Manufacturing Company, 1420 Pennsylvania Avenue, N. W., Washington, D. C. Prices per set of six double chains range from \$4.50 to \$8. Made in sizes for pneumatic or solid tires in all sizes. The short, twisted links are of case-hardened steel and held in place by heavy web straps.

CELFOR AXLE NOW MADE IN ALL SIZES, FROM THREE-QUARTER TON TO FIVE TONS

The Celfor Tool Co., of Buchanan, Mich., builders of internal gear drive type of motor truck axles, announces a full line of models suitable for trucks of from $\frac{3}{4}$ to 5-ton capacity; also a special 1-ton internal gear drive axle designed particularly for electric vehicles, either commercial or pleasure. This job is mounted entirely on annular ball bearings, all live axle castings being of aluminum, to cut down the weight of the job. Spiral bevel gears are also used on this job, so that it may be used in combination with a very high speed electric motor and still be absolutely quiet in operation.

The standard line of axles as above mentioned are all similar to the 3-ton axle illustrated, they varying only in size of parts and materials used. The 1- and 2-ton size axles are built for taking the drive and torque through the springs, but the 3- and 5-ton sizes are built with radius and torque rod connections.



Celfor Internal-Gear Drive Three-Ton Axle

Showing the Celfor axle as it now appears. There is a $4\frac{1}{2}$ to 1 reduction directly at the wheels. On all models the large internal gear, which bolts directly to the wheel, is made from alloy-steel drop forging. After the teeth are cut the gear is case hardened, which the makers state gives the teeth a wearing life which may easily reach one hundred thousand miles. All models are built so as to eliminate right and left-hand parts, thereby much simplifying the repair proposition.

The Peerless Motor Drayage Company Operates Large Fleet

By A. A. WILLOUGHBY


SOME of the important features in connection with the business of the Peerless Motor Drayage Co. of San Francisco have been its remarkable growth in less than three years, the system of truck maintenance, premiums to drivers for efficiency, and a truck that has seen 35,000 miles of rough service with practically no repair expenses.

Commencing operations in May, 1913, with three 5-ton Peerless dump trucks, the fleet was increased by two in August of that year, ten the following February and last November five more were placed in service, making a total of twenty 5-ton trucks in dump service exclusively and comprising one of the largest fleets in like service in the country at the present time. The company was organized by Ralph Blass, Charles Freeman and S. Danzigen, who still maintain the organization. Mr. Blass acts as general manager and gives his personal attention to the service department.

The company has recently concluded a contract for the handling of the material in the excavating work on the Church Street extension of the Municipal Railways of San Francisco, which involves the removal of approximately 75,000 cu. yds. of material. This will utilize the services of the entire fleet together with fifteen leased trucks. On the Church Street contract, a short dump has been provided at a distance of 2 miles from the scene of operations and which will be used whenever the steam shovel might be delayed for lack of trucks. The average long haul will be 5 miles. A contract has been negotiated with the city for the filling in of a school yard, taking in the neighborhood of two thousand yards of material. Low streets will also be filled in as well as building sites and lots, furnishing a secondary source of revenue.

Maintenance

The company utilizes a floor space 50x125 ft. for its garaging and repair work and maintains a well-equipped machine shop for the making of numerous parts. Drivers are not permitted to make any repairs at any time and in reporting troubles of any nature, use a blank manila card 6x8 in. in size, which is attached to the steering column of each truck. The driver's duties are to keep the grease cups on the fan, clutch thrust and water circulation pump filled and the truck supplied with gasoline and oil. All other work about the truck is looked after by the shop men.

An inspector goes over each truck carefully every night to see that nothing has been overlooked by the driver in his report. The company, in buying the trucks, takes charge of the repair work from the start and makes no use of the truck dealer's guarantee beyond the possible replacement of defective parts. Road repairs are not permitted at any time, all work being done in the shop unless of an emergency nature. The heaviest repair item so far has been the hoist parts on the dumping mechanism.

About 25 per cent. of the repair parts used are made in the company's shop and this is being increased from time to time.

Driver's Premiums

A great deal of care has been given to the selection of drivers. It has been the experience of this company that teamsters make poor drivers in this class of work. A new feature was inaugurated the first of the year, offering premiums to efficient drivers, and which promises excellent results, judging from the interest taken by them.

The two main features of the plan embrace: 1st. The general appearance of the truck at all times, exterior and under the hood and including the polishing of the brass parts; 2nd. The attention given to

over basalt block and cobblestone pavements. The first overhauling of the engine during nearly three years' service was recently given and the only work found necessary was the tightening up of the bearings and the renewal of some of the piston rings. Two new sets of tires have been installed, the second set still being in good condition. The loading on the truck has been severe, handling building materials almost exclusively. This truck, as well as the others, carries a 6-ton body.

Costs of Operation

A careful survey of the costs from the inception of the service has enabled the company to arrive at a close figure of what it costs to operate a truck of this size in



Original Fleet of the Company

Showing loading method. The center truck covered thirty-five thousand miles, without complete overhauling, in most strenuous mining work

careful driving and following city traffic rules, such as blowing horn at crossings, correct turning of corners and other items. The percentage plan is followed, 100 per cent. being taken as the basis of thorough efficiency. The general upkeep of the car, including the amount of repair work necessary to keep the cars in regular service, the length of tire service, care of the drive chains, the proper reporting of incidentals and the proper application of the brakes in driving, are all figured in.

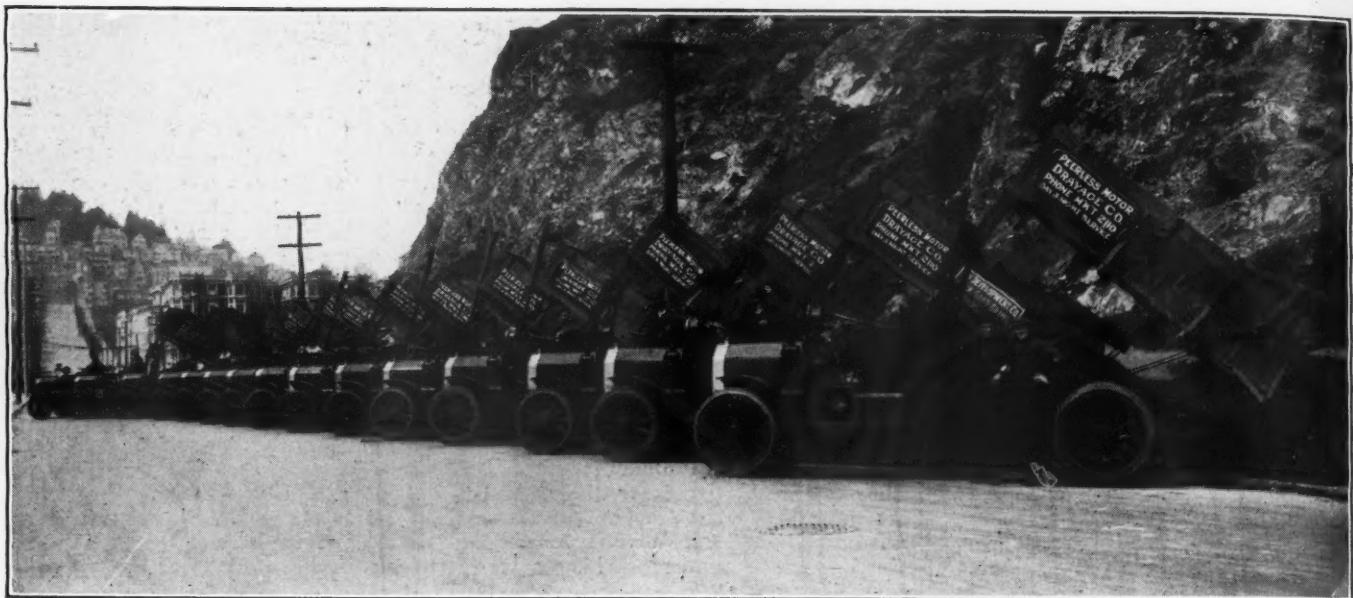
Thirty-Five Thousand Mile Truck

One of the best truck performances that has come to the attention of the writer in the history of motor trucking on the Coast, is that of the middle truck shown in the illustration of the original fleet of the company. This truck has seen the toughest service of any of the fleet, operating mostly

heavy service. On the basis of 10 hours' service per day, it has been found that the average cost of operation is \$17.50 per day which includes driver's salary, repairs and garaging, city and State taxes, licenses, insurance, compensation insurance for employees, gasoline, oils, greases, tires, depreciation and administration expenses. Tire costs are figured at \$.07 per mile. Depreciation is charged at 25 per cent. per year. The latter figure is somewhat generous in view of the condition of the trucks.

Careful Truck Operation

A large sheet is made up each morning, showing the location of each truck and the work it is engaged in so that a check can be kept at all times. On account of the hilly condition of the streets over which the trucks are operated, some strict rules have been laid down for the drivers. All gear



Fleet of Peerless Dump Trucks

This fleet of the Peerless Motor Drayage Company, of San Francisco, is said to be the largest of its kind in the country, for this class of service

shifting for hills must be done at the foot of the hill to the gear which will carry the truck over the grade easily. Strict speed rules prevail. The governor is set at 10½ miles per hour, and the driver is not allowed to exceed this at any time except in the case of coasting with an empty truck, in which event a maximum speed of 14 miles is allowable. When coasting loaded, governor speed only is permissible. Illustrating the care given in driving, the brakes on the original three trucks ran 18 months with only ordinary attention given them.

A Sunday's Work

As evidence of the condition in which the company keeps its trucks, the company decided to concentrate its entire fleet at Livermore one Sunday last fall. Livermore, which is located in the east bay territory, is the shipping point for several mines in the mountains. Two trucks were already in service hauling magnesite ore to Livermore. Six were in service at San Jose, 20 miles south of Livermore; five were operating in and about Oakland, and two were in San Francisco. The fleet of fifteen was assembled at Livermore in the morning. Each truck was loaded with lumber for a quicksilver mine, after delivering which they proceeded to the magnesite mine and each returned to Livermore with a 6-ton load of ore. They then returned to their regular stations and were on duty the following morning. No troubles of any kind occurred, although the trip from the magnesite mine is considered a bad one for a truck.

Continuous Work for Ninety Days and Nights

One of the trucks regularly employed in hauling for this mine recently made a record for ninety days' continuous service that is worthy of note. During that period it was in service every day, and in addition fully half the time was in service day and night, and at no time was there any delay occasioned by the truck.

Six of the trucks are equipped with the Peerless standard bed dump bodies with

screw hoist. The remainder are fitted with a locally built device which will dump at a higher angle and is somewhat faster in operation.

Mr. Blass states that in his experience an engine and transmission having three-point suspension and a light chassis frame that is trussed and flexible, have given the best results in the heavy dump trucking field. He also states that few companies give the proper attention to the construction of the driver's seat and seat back.

rupled their drovers' business, handled in connection with their daily farm on Washington Street, in the outskirts of Los Angeles. The truck gives due consideration to the matter of quick loading without risk of injury to the cattle. It has a loading platform on which they may be driven onto the truck bed, and this loading platform is sectional so it may be carried on the truck for unloading. It is in five sections, built of hard wood and fastened to sockets on the back of the body. The sections are carried on each side of the truck. An important point is that the truck can transport cattle through settled sections where they could not be driven. So it saves in both speed and distance and delivers the cattle in good condition.

TWO-TON TRUCK QUADRUPLES DROVERS' BUSINESS

Hauling six cattle at a trip in their Mack 2-ton truck, especially equipped body, Max Kerchner and Polikoff have quad-



Specially Equipped Truck for Handling Live Stock

It is used to carry cattle through sections where they cannot be driven



Two of the Latest European Chasses: The Guy One and a Half Ton Machine and the Wells Three-and-a-Half-Tonner

By OUR FOREIGN CORRESPONDENT

SINCE the beginning of the war very few new commercial car designs have made their appearance in any of the belligerent countries. The only ones I have heard of have been produced in England, and for the most part they are mere assemblies of stock parts. There is one machine, however, which by no means comes under this description, and is of particular interest in that it embodies many of the details that are likely to make their appearance in other commercial car models after the war. This is the Guy chassis in 1½- and 2-ton sizes. For the purposes of describing the general lines common to both, the illustrations and the following specifications of the 1½-ton chassis will suffice:

The engine is a White & Poppe, four cylinders, 80x130 m.m. (approximately 3 5/32 in. by barely 5 1/8 in.), h.p. 15.9 by R.A.C. rating, high tension magneto, Zenith carburetor, and pump water circulation through tubular radiator.

The clutch is a leather cone with flexible joint in clutch shaft to gear box.

The gearbox has four forward speeds, direct drive on third, geared up fourth.

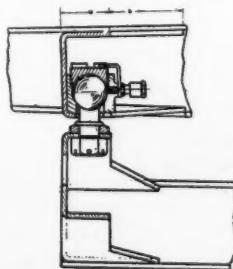


Fig. 2. Front Suspension of Subframe

The ball joint by which the engine and gear box under-frame is slung at its front end

There is a double universal jointed propeller shaft to double reduction bevel driven live axle.

Flexibility in Construction a Salient Point

Turning now to the special features, we see the main units of the mechanism are carried on the chassis frame in such a way as to allow great flexibility between the two, and of easy removal of the units. The engine and gear box are carried on a sub-frame inclined downwards at the back so as to bring the propeller shaft into a straight line when springs are normally loaded. It

is the suspension of this sub-frame that gives the flexible construction, by assistance of three point suspension, but unlike many three point systems it allows proper flexibility, as may be gathered from Figs. 2 and 3. These two illustrations, taken in conjunction with Fig. 4, will also show how very easily removable the entire sub-frame is.

Even in this sub-frame a certain amount of whip is allowed for, as may be gathered from the flexible joint inserted in the short shaft between clutch and gear box (Fig. 5).

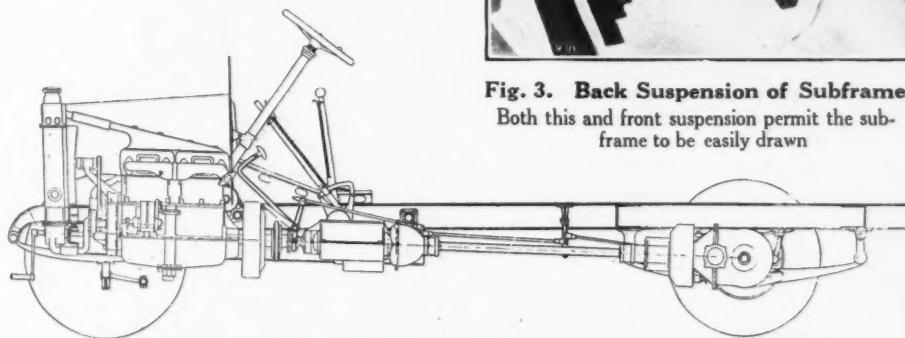


Fig. 1. Side Elevation of the One and a Quarter to One and a Half Ton Guy Chassis

Engine and transmission are inclined, so as to give straight alignment to the back axle, and a normal load

Governing From the Transmission—Car Speed or Engine Speed?

The engine itself is not fitted with a governor, but there is a governor on the tail end of the main driven gear shaft in the universal joint casing at the back of the gear box (Fig. 6). The centrifugal weights are in fact carried on short arms projecting from the driving fork of the

universal joint. These weights by centrifugal force actuate a carrier sliding along the shaft boss of the universal joint, and this in

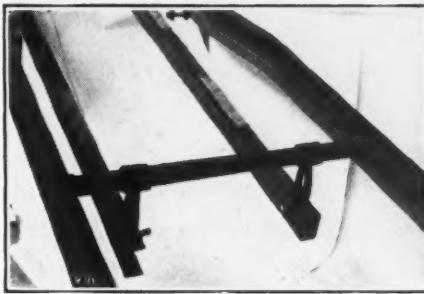


Fig. 3. Back Suspension of Subframe
Both this and front suspension permit the sub-frame to be easily drawn

turn actuates through a lever a rocker shaft passing through the universal joint casing, and acting by lever and connecting rod on the engine throttle.

The gear box also has other features. In the ordinary arrangements of sliding gears the teeth are beveled off for say a length of

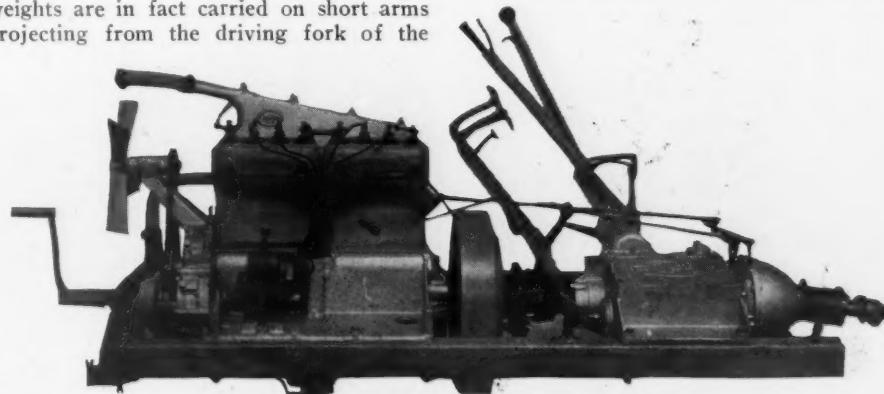


Fig. 4. Engine and Gear Box Mounted on Subframe
The governor connections are well shown in this illustration

4 m.m. Now the action of these teeth is very dependent on their correct profiling, and therefore, where the bevel occurs, the teeth surfaces are not most efficient; therefore at each end of the engaging surfaces

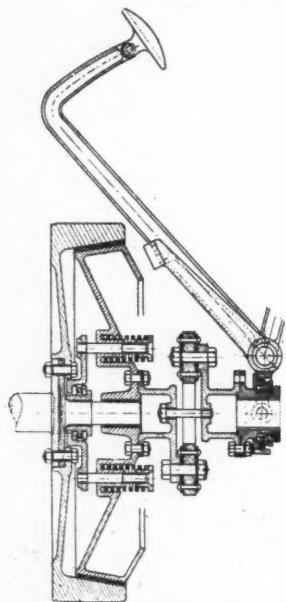


Fig. 5. The Clutch and Shaft With Flexible Joint

we have 4 m.m. of inefficient surface as explained by the right side drawing in Fig. 7. In the Guy design this is allowed for on the lines explained by the middle and right side drawing of the same figure.

One other point in this gear box calls for attention, and that is the fact that the complete selector gate mechanism is self-contained with the gear box, leaving it entirely independent of the frame, and thus unaffected by any frame play; also the casing of this mechanism is placed so as in no way to interfere with the removal of the gear box inspection cover.

Working backwards the next point of interest is the back axle, which is of a type coming into increasing use in Great Britain—the double reduction bevel drive. Fig. 8 shows the general arrangements of this axle, which consists of a central steel casting into the tapered ends of which stout steel tubes are pressed hydraulically, and covered by flange-bolted castings. In the drawing a dotted line will be noticed across the front of the central casting (along the axis of the reduction gear); this is where

a flange joint occurs, enabling all the casing in front of this joint to be removed. Besides removing from the studs the nuts of this joint, the two forward bolts holding the casing containing the ball races of the reduction shaft have to be removed. Thus only the driving pinion shaft is detached. Fig. 9 will explain this point, and Figs. 9 and 10 will explain how the removal of the pair of bolts on the after-side of both these ball race casings enables the reduction shaft also to be withdrawn, after which, since the axle is designed on the floating principle, the axle caps can be removed and, when the axle shafts are withdrawn from their

ing a part already too prone to wear to any additional wear and tear.

To Lessen Lubrication Labor

Finally, the lubrication arrangements have been arranged to minimize trouble. The gear box is designed for oil, not for grease, and arrangements are made for the oil to work through past the bearings, into the casing of the universal joint and governor; thus neither need depend on lubrication that is liable to be thrown away by centrifugal force.

Behind this joint casing is a flexible piece of tube, and beyond this a small flange metal bearing, around the inside of which a helical groove is cut so that rotation of the shaft tends to pump back into the joint cover any oil leaking along the grooves. Of the effectiveness of the arrangement we need only say that, with the shafts rotating, the gear box has been tested to an internal air pressure of 10 lbs. per sq. in. In the double reduction gear too arrangements are made for oil to pass from the double reduction casing on to the working surfaces of the dash pot universal joint.

Many car designers made a virtue of the number of grease lubricators fitted. In the Guy everything contributes to a decrease of that number. For instance, look at the back axle design and notice how each brake rocker camshaft is carried in two brackets

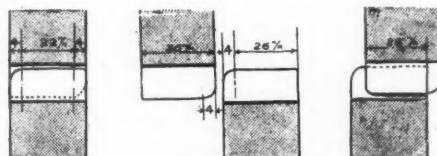


Fig. 7. Explaining the Meshing of Beveled Teeth

seating in the wheels of the differentials, the entire differential and spur crown wheel may be drawn away as indicated in Fig. 10.

An Universal Foot-Brake Position

Another feature at this part of the chassis is the position of the foot brake. In most European designs this is placed on the main driven gear shaft at the back of the gear box, and the braking stress thus has to be transmitted through the cardan joints. The Guy arrangements, however, avoid subject-

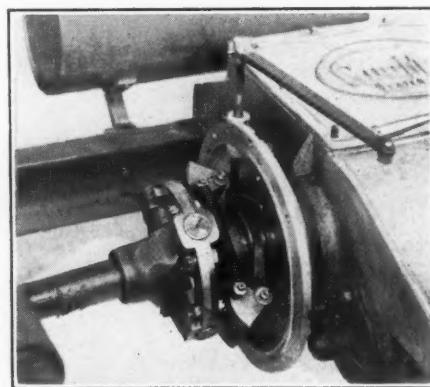
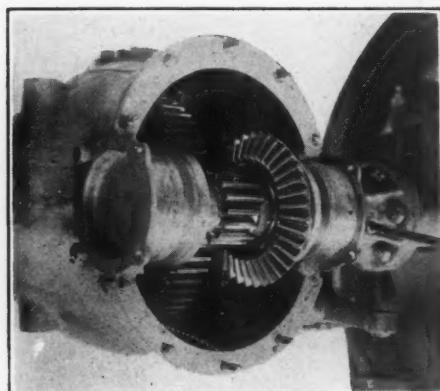


Fig. 6. The Gear Box With Casing for Governor and Universal Joint at Back End



Figs. 9 and 10 Explain the Method of Dismantling the Driving and Differential Gear of the Back Axle

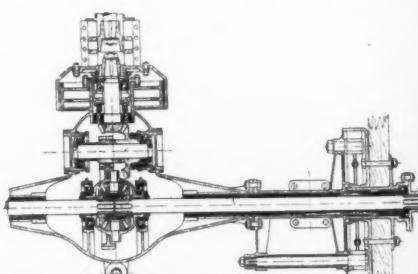


Fig. 8. Drawing to Show the Generator Arrangement of Back Axle With Double-Reduction Bevel Drive

off the axle casing. These two are connected by a tube placed over the bearings, which are forced into the brackets, and in which the shaft turns. The greaser is put midway in the connecting tube so that the one lubricator does for the two bearings of the shaft. Incidentally, another feature to be noticed from this drawing is the castellated seatings for the brake levers, which permit considerable range of adjustment in addition to the ordinary brake adjustments.

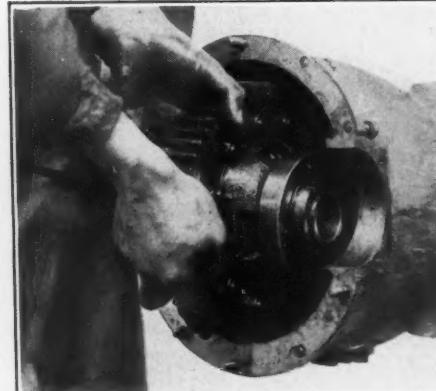


Fig. 11. Plan View of the Brake Just in Front of the Back Axle

The Wells Three-and-a-Half-Tonner

ANOTHER model that has recently made its appearance in the United Kingdom is the Wells 3-tonner, which is made with three or four speeds as desired. Between the two models there is some little difference from the back or gear box to front of rear axle, the three-speeder having an open cardan shaft with deep, thin radius-torque rods lying close along either side, while in the four-speed chassis the propeller shaft is enclosed in a torque tube. Apart from these details the two designs are similar.

The Military Influence in Design

In the design the military requirements of the British War Office have very evidently been kept in view. The radiator is hung on trunnions and made to dimensions which render it interchangeable with military standard, a Dorman subsidy engine is fitted, ball bearings to War Department standard sizes are used, and in the main the controls follow the same requirements.

Some Minor Points in Control

But over and above this the chassis embodies certain noteworthy features. The engine control is arranged with the hand

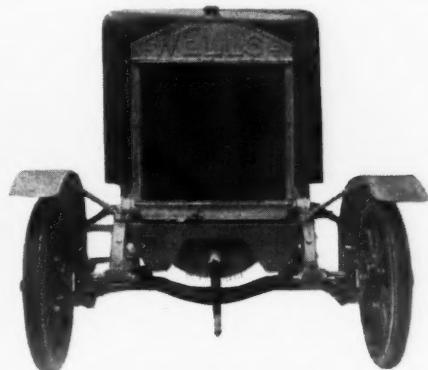


Fig. 2. Front Views of the Wells Chassis

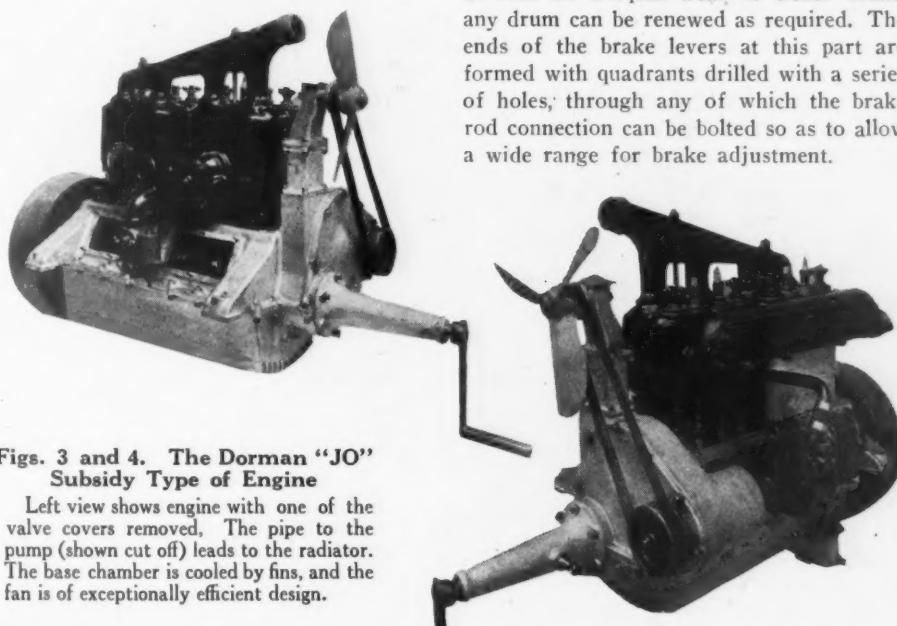
throttle lever above and the spark variation below, and is not carried inaccessibly down the center of the steering column, but outside of it, and a tubular shaft is connected with the lower or ignition lever, so that the rod from the throttle lever passes down through it. This latter is placed above a toothed rack, and the ignition lever below its toothed rack, so that each is pressed against the teeth of its respective rack by a single little coil spring

at the bottom of the lever shafts, forcing the central one downwards as it forces the ignition lever tubular shaft upwards. From this point onwards all the control rods have been made as simple and direct as possible to eliminate ball joints.

A complete worm wheel instead of the usual sector is used in the steering gear, and as the lever to the drag link fits on a castellated end of the worm wheel spindle, it is only necessary, when wear

shaft is similar to that used on the end of the worm spindle.

There is one point in which the control arrangements do not follow British War Office practice, for the hand brake is applied by pulling instead of pushing on. The brake arrangement is rather unusual for Europe, since both brakes act on the back wheels, but each in a separate drum, the one within the other, with the idea that in case of unequal wear in either brake, any drum can be renewed as required. The ends of the brake levers at this part are formed with quadrants drilled with a series of holes, through any of which the brake rod connection can be bolted so as to allow a wide range for brake adjustment.



Figs. 3 and 4. The Dorman "JO" Subsidy Type of Engine

Left view shows engine with one of the valve covers removed. The pipe to the pump (shown cut off) leads to the radiator. The base chamber is cooled by fins, and the fan is of exceptionally efficient design.

has shown itself, to take this off and give the steering wheel several turns to bring fresh worm wheel surfaces into action. The worm wheel can easily be removed, for the left side of the steering gear box is enclosed with a large round cover, flange-jointed and held to the box by nuts and studs. The worm, too, can easily be withdrawn by removing the top cover, or steering column socket, at the top of the gear casing.

Throughout, the chassis parts have been standardized as much as possible: for instance, the bushing at the end of the worm-

The Quadrant Rack Instead of the Selector Finger

In the four-speed gear box the usual selector finger is substituted by toothed quadrants which, when in action, mesh with toothed racks on the selector rods, and which, by simultaneously meshing with other racks fixed immovably to the gear box itself, serve to lock all gears but the one required in action. It is claimed that while the pressure of the selector finger becomes less and less effective with the angular movement of the finger towards

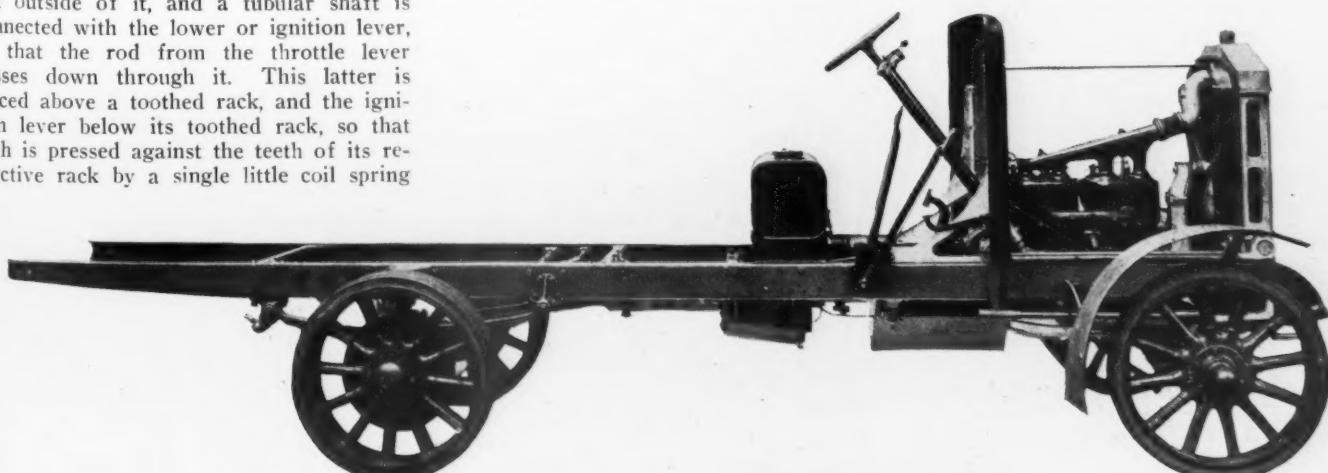


Fig. 1. The Three-Speed Wells Chassis—Side View
Showing gasoline tank under seat, metal dash and steel wheels

the horizontal, the pressure exerted through the quadrant on the selector rod remains constant.

Speedometer Drive as it Ought to Be

One other unusual little point—arrangements are made for drawing the speedom-

of these shafts from the differential sun wheels. Our illustrations do not show these lugs.

The steel wheels are built up in two halves, the plane of jointure lying at right angles to the axle shafts. It will be noticed that the spokes have little projecting fillets

attention. At this part a 5-in. diameter recess is cut in the casing in front of the ball bearing, and any oil that works past the bearing is turned back by the action of a left-hand worm thread cut on the shaft for this purpose, while leakage is further safeguarded by 1½-in. thickness of felt washer pressed to an oil-tight fit by a sprung metal flange cover at the end of the casing recess.

Subsidiary Volute Springs for Load Variation

One of the most salient features of the Wells design is the subsidiary springs at the back. These, and the rubber buffer upon which they act, are best explained by Fig. 9, but it is worth pointing out that the action of these volute springs is progressive to a theoretically perfect extent, the coil at its larger part being the most easily deflected while it becomes stiffer as the coil becomes smaller.

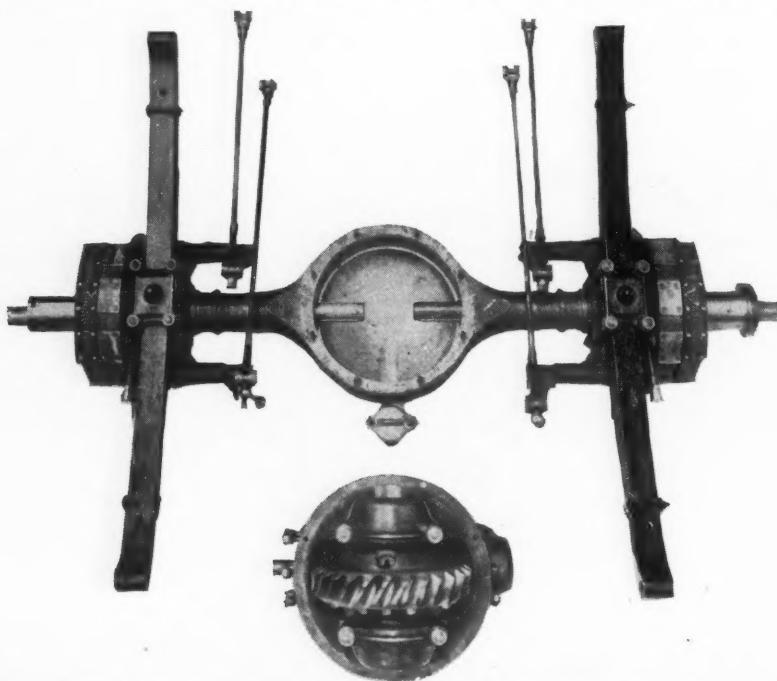


Fig. 5. The Component Parts of the Wells Back Axle When Dismounted

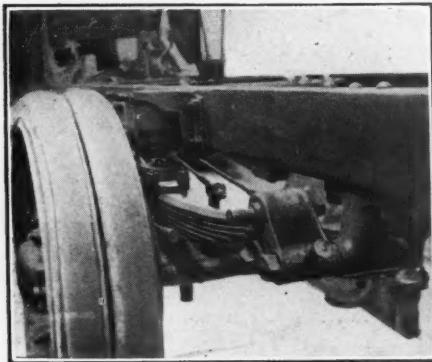


Fig. 9. This Photograph Shows the Volute Subsidiary Springs on the Three-Ton Wells Chassis

Subsidiary springs promise to come into more extended use

eter from the main gear shaft inside the gearbox, and the flexible speedometer drive can be led through a hole in the gearbox wall on either side, the flexible shaft being led through an oil retaining gland, while the hole on the opposite side of the gearbox is screw-plugged.

To Facilitate Axle Dismantling

The back axle calls for but little remark. It is built up on a fine banjo forging of 40-ton tensile steel, but the banjo lies horizontally instead of, as is more usual, vertically. Being of the floating type, the worm crown wheel and differential can be lifted as soon as the axle shafts are withdrawn, and as the latter are castellated at both ends, and a nice fit on the axle caps at one end and the sun differential pinions at the other, the axle caps are to be fitted with lugs which will assist the withdrawal

at the outer ends, and the purpose of these fillets will be seen from the drawing.

To Retain Oil

Arrangements for oil retention at the front end of the worm casing of the back axle in the three-speed model are worth



Fig. 7. One of the Steel Wheels on the Wells Chassis

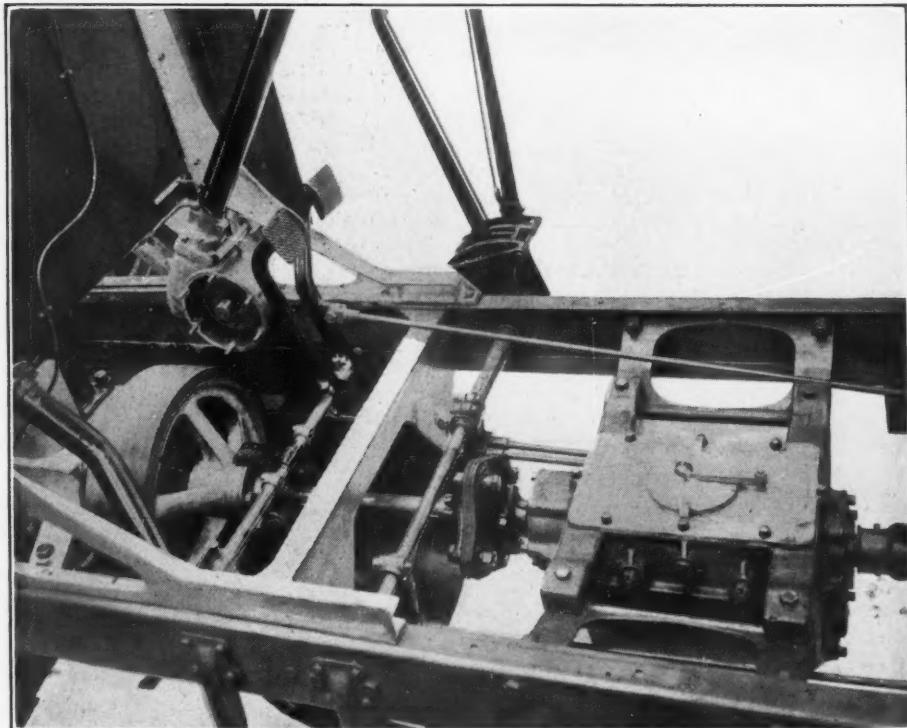


Fig. 6. From Clutch to Gear Box of the Three-Speed Wells Chassis
This shows the cover of the steering-gear box removed

Useful for the Body Builder

The 30-gal. gasoline tank is oxy-acetylene welded; solder is not used; also, it is bedded on felt and carried on cradles to which it is secured by metal straps. These cradles are carefully secured at a standard distance from the dash, so that the pipe

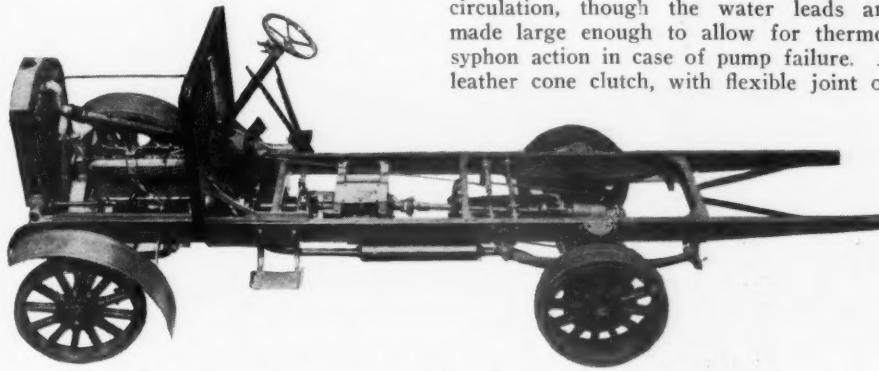


Fig. 8. Half Plan View of the Wells Three-Speed Chassis
Showing the boxlike construction of the thin twin radius torque rods

lengths can be standardized—a feature of considerable importance to the body makers.

General Specifications

For the rest it is enough to say that both three- and four-speed models are 40-h.p. machines, with a bore and stroke of 4 5/16 x 5 1/2 in., cylinders cast in pairs, and pump circulation, though the water leads are made large enough to allow for thermosyphon action in case of pump failure. A leather cone clutch, with flexible joint on

the clutch-shaft, and propeller-shaft drive to worm back axle, complete the power transmission system. In the four-speed model, however, the gear box is carried at three points, the third at the back of the gear box being afforded by a substantial steel cross-frame member, the projecting circulation boss from which is recessed into the back of the gear box all round the bearing of the tail-shaft, and this boss on the steel cross-member is also made to constitute part of the ball and socket joint of the torque tube.

Although the frame construction at the back permits a variable length, the standard designs allow 11 ft. for loading platform available behind the driver's seat. On a wheelbase of 11 ft. 6 in. the track measures 5 ft., while across the chassis frame measures 3 ft. and the overall length of the vehicle is 19 ft.

Throughout the design the object has been to afford substantial construction and large wearing surfaces, with comparative lightness; indeed, the chassis looks heavier than it is, for it only weighs 2 tons 7 cwt.

"Merchandising" Principles Pay in Selling Trucks

By H. G. BLODGETT



N. F. SUTTON smiled the smile of experience when asked if the principles of modern merchandizing developed by the great merchants of the day really pay when applied to the business of the commercial car dealer.

"I should say yes," he commented, and then he told this story out of his experience.

"Our salesroom is not on the main automobile thoroughfare of St. Louis. Sometimes I wish it were. But it is on the main street car line to the residential district. That fact, coupled with our determination to make the most of it, has actually sold many a truck that we never would have otherwise sold.

"Many truck prospects use the street cars. Practically all prospects from out of town use them. A month ago a merchant from Oklahoma came to town, unannounced, bent on buying a truck. He had made up a list of several dealers whom he wanted to see. He hopped on the car to go to the nearest one and en route passed our salesroom. There in the large display windows were several trucks, of various sizes, with the prices marked so boldly that he could read them from the car window. He got off, told me his story, and—well, you know the rest. The next day we wired the factory for another car to take the place of the one he bought."

While Mr. Sutton has the title of St. Louis branch manager for the "GMC" for all practical purposes he conducts a "commercial car store" and service department that has for its field St. Louis and a large circle of the territory nearby. His methods of display, service, and sales are to a large extent his own, and in them the dealer will find much that he may adapt to his own business with profit.

Here, in brief, are some "Sutton Suggestions" for the dealer who is confronted

with the problems which Mr. Sutton has most satisfactorily solved.

To be really successful the commercial car dealer must look upon his line as "goods," or "merchandise," which he buys to sell again. Even though the dealer may



N. F. SUTTON, Manager of the St. Louis GMC Branch

not carry cars in stock he must get the "merchandizing spirit." He can attract prospective customers by developing a real selling personality, by the various forms of advertising, including an actual attractive display of "the goods," by serving old customers so well that they not only "come back" but send around their friends.

"Once a prospect always a prospect" is Mr. Sutton's slogan. And he keeps hammering away on that prospect until he either becomes a customer or buys some other truck. The salesman's report of a "first call" is made out on a white card for the office files, and calls for a definite

schedule of printed follow-up mailings. A yellow report of the same call goes to the factory for further co-operation. When the sale is made, or finally lost, the report is made out on a red card for the office, which automatically closes all effort to sell that prospect until word is received that he is in the market again. This red and white card system eliminates all danger of wasting sales energy that ought always to be expended in the channels where it will count most.

Mr. Sutton is a strong believer in the complete service and repair department for the truck dealer. Such a department more than pays its way, and at the same time keeps customers boosting for the dealer. The expense of equipping such a repair department is not beyond the means of the average dealer, even in the smaller cities. The heavier equipment required consists of only a portable crane, a lathe, a drill press, an emery wheel and a portable forge, all of which can be bought for around \$600.

"Money spent for such an outfit," says Mr. Sutton, "will prove a most profitable investment."

WHEN THE BUYER TRIES TO OVERTAKE ON SERVICE

Every dealer who has been in business is likely to have had experience with truck buyers who attempt to take advantage of their guarantees and the dealer's service policy to get free something to which they are not entitled. A Western dealer speaking of these cases says bluntly, "The only way to treat a hog is to take a fall out of him right away. We have had these fellows come at us and we always say, 'How much do you want for your truck? Either you will sell it back to us or shut up.' Our experience has been that they shut up. We have never been allowed to buy one back."

Where Haste Made Waste

How Conservation Won Out in the Face of Seemingly Insuperable Obstacles

By LEN G. SHAW



HENDERSON realized that he was up against one of the hardest propositions in his long experience as a truck salesman. That fact became apparent early in the proceedings. Now it was being driven home with such regularity that it was beginning to get on his nerves.

He would not acknowledge defeat, even to himself, but—"figure it out for yourself. It's just a simple matter of mathematics."

That was all the satisfaction he got from the traffic manager for Beyster & Waterfall every time he sought to enlist the interest of that individual in the trucks he handled.

And as he heard this challenge enunciated for the tenth time Henderson caught himself gripping the arms of his chair as he struggled to restrain his wrath.

Beyster & Waterfall were in the market for two trucks—that is, they were until Reynolds, of the Metropole Truck Co., placed one of his machines. It had about been decided to buy a second Metropole, largely on the strength of the salesman's sayso, and Henderson, who with others had been anxious to secure the business, was making his last stand.

The traffic manager granted cheerfully that the Wearwell Truck which Henderson represented was a good machine. It had the same capacity as the Metropole—5 tons—and in a general way it was difficult to choose between the two from a study of the specifications.

The hitch came in the matter of speed. The Wearwell was set to travel 15 m.p.h., and no more. The Metropole man claimed 20 miles for his machine.

"That's 200 miles in ten hours, against 150 for you," said the traffic manager, "30 per cent. more mileage every day for the other make. Unless you equal that I don't see how you can hope to compete. With us it's a matter of covering the ground, and the fellow that gets there and back the quickest lands the business."

There was no answering such an argument. Henderson felt that such a showing could not be made day in and day out, but he didn't have the proof to produce.

"I'll tell you what I'll do," he suddenly exclaimed, leaping to his feet, and leaning across the table until his face was close to that of the traffic manager, while one fist came down with a bang. "There isn't any use of our sitting here arguing this matter any further. There's a bit of sporting blood in my veins—and I'll bet there is in yours.

"Now, here's my proposition. I'll put a Wearwell truck into your service in competition with the other machine for one month—no less. If the Wearwell accomplishes as much in that time as the other machine does you are to buy it. If it fails, we will charge you just the same for the service rendered as it would have

cost you with the other make of truck, figured on the actual showing made by the Metropole, and take our truck back, with no further obligations on your part."

The traffic manager studied the proposal for a couple of minutes.

"Well," he laughed, having made up his mind, "I can't see any catch in that proposition. It seems too ridiculous to be true, but since you are so anxious—you're on. It doesn't seem to obligate us in any manner, except to pay you what it would ordinarily cost us for hauling, and turn the truck back to you at the end of the month."

The traffic manager's cheerful acquiescence was in marked contrast to the attitude of Henderson's employers when they learned what he had done. McMullan frowned, and Neuville was outspoken in his hostility to the plan.

"We've always done business on the level," he stormed, "and that's the only way we'll do it if I have anything to say."

Henderson insisted that the deal was on the level.

"That's the third sale Reynolds has beat me out on," he protested, "and always on the point of speed. I'm going to call the turn on him now."

"Well, I fail to see how," grumbled Neuville, while McMullan nodded assent.

"Just this way," explained Henderson. "You know, and I know, and Reynolds knows, that a 5-ton truck never was intended to run loaded at the speed he claims. His truck will do it—so would ours. But it's speeding it up too fast, and the result is that his trucks are out of commission a lot of the time, and at the end of a few months they need rebuilding.

"Now, that may get by all right where there is no competition—but believe me, he's going to have competition this time. We'll put a Wearwell right alongside the Metropole—set the governor at 15 m.p.h. and let the other fellows do whatever they want to. Counting the time their truck will be in the shop for repairs, we'll cover more miles in one month than they do, and carry more tons, or my name's not Henderson. Do you get me?"

"Well," said Neuville, the light breaking, "it seems worth a try. We ought to get some pretty good comparisons. And if it works out all right"—

"If it works out all right we'll motorize the whole Beyster & Waterfall delivery system," said Henderson, earnestly.

It was an anxious month for Henderson. A careful driver from the service department took charge of the Wearwell. The Metropole was handled by a former ambulance driver, whose crowning ambition was speed.

Every morning the two trucks checked out. At night they checked in, and the traffic manager attended to this detail, determined to get the facts first handed.

At the end of the month Henderson entered the office of the traffic manager,

"I've come to take our truck away," he announced.

"You have not," was the emphatic rejoinder.

"Well, at any rate, I think we'd better settle on the basis we agreed upon," persisted Henderson.

"Not on your life," objected the traffic manager. "Say, if I was to pay you for what the Wearwell did on the basis of what it cost us to run the Metropole I'd lose my job—and I ought to."

"What do you mean?" inquired Henderson, feigning ignorance.

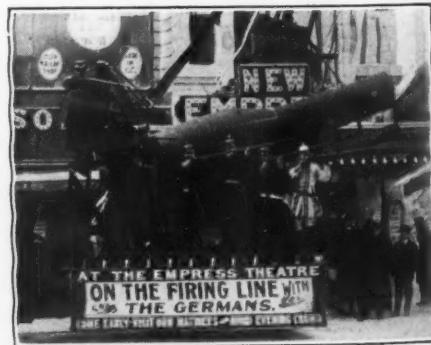
"Why, that Metropole truck was in the repair shop pretty nearly half the time—and it acts now as though it was going to fall to pieces. It's a wreck—and I'm pretty near one from trying to keep it going."

"We didn't have a bit of trouble with the Wearwell—always knew in advance just about how many miles it was going to make in a day. And it hauled just about 10 per cent. more than the other machine."

"Oh, but it was so much slower," expostulated Henderson. "How could that be?"

"Slower nothing," snorted the traffic manager. "I thought it was—but it wasn't. It kept right on the job—and that's what counts with a truck—not the spurts, but the steady grind. We're going to keep your truck—and just as soon as we're ready for more I'll let you know. No more of this 'speed first' stuff. I'm off that."

"Not so bad, old man," mused Henderson to himself, as he left the office. "From now on Reynolds is my best salesman—and believe me, if anybody ever puts him wise to how he is killing his own game it will be someone besides Tommy Henderson, eh, Tommy?"



Motor Truck Helps the Movies

The illustration shows how the manager of a Kansas City moving-picture theater brought crowds to his show by using a truck in his advertising. German war pictures were to be shown and, as the theater in the past had not been doing a big business, some novel plan of advertising had to be carried out. It was finally decided to use the truck. Onto this was built a large imitation forty-two centimeter gun and a large searchlight. Light was supplied by a gasoline engine and generator. To say that the scheme was successful, is putting it mildly.

Service and Responsibility Fundamentals of Success

Smith Brothers, of Los Angeles, Peerless Distributors, Consider Past Success Simply a Foundation of Greater Future Business

By FRANK REED

YES, I do want to make it strong. I mean just that when I say the future awaiting the motor truck in Southern California is very wonderful."

To bring out his reason sharply the correspondent of COMMERCIAL CAR JOURNAL insinuated that these words of C. R. Teaboldt, sales manager of Smith Bros., Los Angeles, Peerless distributors for all Southern California, needed backing up by some analysis. And Teaboldt, who knows by experience the business of selling high class automobiles from New York City, Detroit and Chicago to San Diego, leaned forward to emphasize his conviction, and spoke with care:

"How can you, knowing conditions, hesitate to see it? Though we have half a million people in Los Angeles, this country is comparatively new. All the resources with which Nature has surrounded it are only beginning to be worked. This is true in the fundamental resources of agriculture and minerals. And manufacturing, based on natural resources, people, ideal living conditions, and transportation, is barely started. The country will undoubtedly have a great increase in population, and support its people well. It is a certainty that railroads will not be able to keep up with the progress of the country. Good highways will continue to be built as fast as agricultural and general business can support them. Then transportation is simply a question of more motor units. Remember the Panama Canal and its cheap freight rates. With the harbor only 22 miles from the city, and motor trucks able to deliver goods from steamboat to city warehouse and vice versa cheaper and in

better condition than the railways, motor trucks are bound to 'cinch' this business, both incoming and outgoing."

Like Truck Business as Well as High-Class Pleasure Car Selling

Smith Brothers are distributors for Peerless pleasure cars and trucks. They took the truck agency at the same time they took the pleasure cars, not because they had to, but because they thought the commercial car business was a good business, that there was a good market for them in their locality. In fact, they considered that the trucks would build as good a business as the pleasure cars afforded. Although they have added other pleasure cars to broaden their line, the Peerless truck is the only one they have wanted. They have had opportunities to take agencies for smaller cars, but felt that it would pay them best to specialize in serving people who have money and want the best. They did not want to be in a position of serving several classes of trade.

Financial Strength and Service Have Been Trade Getters

Responsibility and service have been the big factors in the growth of their truck business. Their financial strength has enabled them to pursue a continuously active sales policy in the face of local conditions which make it necessary to finance for buyers 95 per cent. of the purchases of trucks—that is, the trucks must be sold on time payments, allowing from eight months to a maximum of a year to pay off. Business houses want to write off a certain amount a month, while having the use of the trucks.

Factory Co-operation Necessary for Dealer Success

A great deal of the business is for mining and oil hauling. This necessitates special bodies. The Peerless people have shown themselves to be broad-minded and wide awake. A dealer cannot sell trucks unless the manufacturer co-operates. A manufacturer, for example, must be willing to make changes of a minor character to suit special requirements, and must not only be fair and even liberal in the matter of replacements, but prompt. When a man lays up his truck he lays up not only an investment, but an income producer. Service must be more prompt than for touring cars.

Monthly Inspections Keep Up Efficiency for Owners

Smith Bros. have learned that a dealer must give the maximum service. When they sell a truck they begin a continuing relation with the owner. They have their men make monthly inspections of trucks on the work to discover any abuse or incorrect operation; give all minor adjustments gratis and call attention to any charge work which should be done, saying why. This is in addition to the guarantee. The results are confidence, re-orders and stable business. The dealer recognizes that good will of the buying public is an asset. Assets that are truly valuable cannot be produced without effort and expense. Their efforts in giving a maximum service, as stated, produce the kind of good will which is a real asset, because it produces business, creates prospects and assists sales.



Salesroom and Service Station of Smith Brothers, Peerless Truck Distributors for All Southern California

The CCJ has most readers because it gives most information

Their inspection and advice and businesslike handling of replacements they distinguish from repair shop work. The fact that they have a well-equipped repair shop is not much of a factor in producing truck sales. Most of the people who buy high-priced trucks have their own repair shops in connection with other features of their business, and do their own overhauling.

Smith Bros.' building, an automobile sales building of the highest type, helps sales perhaps indirectly, through affording visible indication of their ability to deal with buyers on a high plane of service and responsibility. But the building and sales room do not hypnotize prospects into signing contracts. Very few truck contracts have been signed in it. Their trucks are sold to men who have seen Peerless trucks at work, and studied their records in operation by earlier buyers. Contracts are signed by buyers at their own desks.

Advertising and publicity are a definite part of the selling program. Smith Bros.

use a thorough follow-up system. They take care not to kill off work on an apparently inactive prospect too early. If the firm is sound and has a use for a truck they consider it a prospect until it buys. People look far ahead in buying trucks, so the dealer has to adopt a long range policy. They know purchasing agents who have investigated for two years before buying. This is rather an ordinary experience. Then, too, they have had cases where they have learned of a prospect, called on him, made the sale and got the money, all in one afternoon.

Sales Manager Teabold's closest sale was made to a municipality in direct competition with nine other trucks, all of whose representatives were on the job talking their product. One of the factors in making the sale was strictly talking his own goods. He did not knock another truck. Where he had an advantage he dwelt upon it without mentioning the other fellow. Some of the other fellows knocked, but the city bought a Peerless.

The most difficult sale the firm ever had was where it had to help the organizers finance a company, which later bought \$100,000 worth of trucks in a single order. Smith Bros. got the order all on one paper, and got the money for the trucks.

They state as the five principles which have most helped their truck sales the following:

1. They thoroughly believe in their truck.
2. Responsibility of the factory and themselves. By responsibility is meant the full strength of the term as a business man understands it, including moral responsibility and a reputation for fair dealing.
3. Financial ability and personal interest in every sale.
4. Service rendered.
5. Satisfied owners, the fundamental source of increase in sales.

Denver Dealer Attributes Success to Honesty, Price Maintenance and Service

Being an Interview With W. W. Barnett, of 1308 Lincoln Street, Denver, Colorado, Agent for the Federal Truck

By H. G. HEDDEN

membering that the other fellow may be right sometimes—maybe this time.

LONG COMMISSIONS: The curse of the truck business, established to permit price cutting, or to delude the customer who has something to "trade in."

SELLING: The average sale is made to-day to the man who knows he wants a truck, but does not know which one. It is seldom necessary to go into comparative cost between hay and gasoline.

TERRITORY: Colorado and Wyoming. I find that most of the sales are made in the cities, but the people with long hauls, stage lines, ore haulers, ranchmen, are waking up to the necessity of using commercial cars in their business and are studying the question very seriously. Some

of them buying, others looking ahead to the time when they will be able to buy.

PARTNERSHIP: I believe that if the manager of a business will say to his truck driver: "You are now getting \$15 a week for driving our truck. Hereafter we will pay you \$17 a week and expect you and your helper to look after the machine, keep it washed, greased, tightened up, and if at the end of the year the upkeep has been low during the year and the tires, body and machinery show that they have received careful attention we will give you a bonus at the end of the year." In this way the men who handle the truck are interested with the owner in its successful operation. Another advantage is that the owner is more likely to keep a good man in his employ for a much longer period.



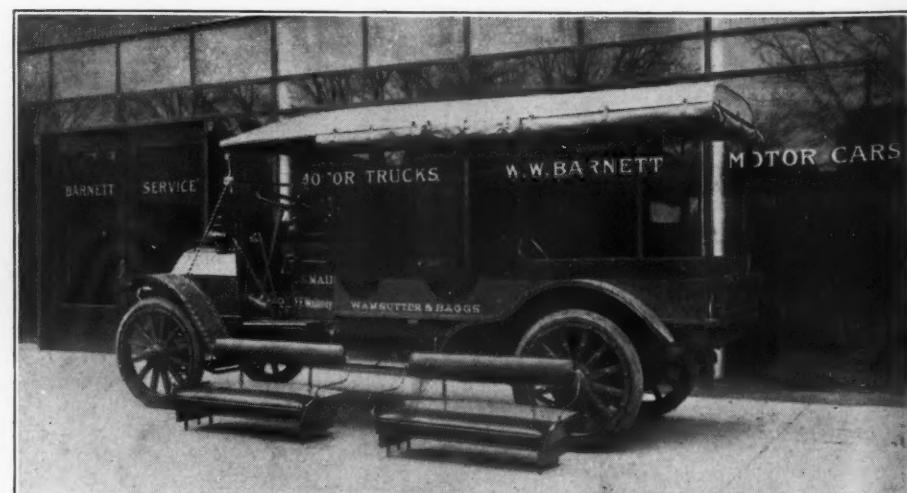
THE BEGINNING: May 1, 1906, the natal day of my automobile business, witnessed that institution started on a "shoe string," my partner and I putting but \$1500 apiece into the business, and investing most of that in a Stoddard-Dayton demonstrator. Soon my partner decided to seek greener fields, and I purchased his interests with the earnings of the business made during the six months following the dissolution of partnership.

In 1911 the sign on my window was changed to read "MOTOR CARS AND TRUCKS," as in the summer of that year, after much study and consultation, I put in my first demonstrator, a 3½-ton Alco truck. It seemed a big undertaking, kind of a Christopher Columbus one, but how little I realized what the harvest would be. After looking around several months for a truck of smaller capacity, I added to my line the "Federal."

SERVICE: This is the keynote of a successful business. On the plate glass of my double front doors in gold letters ten inches high appears "BARNETT SERVICE," and I think my service has helped me sell more machines than my salesmen. Carry parts in stock. Give immediate attention to all complaints. Keep the trucks in operation. Do all possible to keep the cost of operation and maintenance as low as possible.

Five reasons for my success in handling commercial cars:

Being honest, giving prompt and efficient service. Making no statement that you can't back up. Maintaining prices. Re-



"Barnett Service" is Conspicuously Displayed on the Door



The Republic Truck Offered in Four Models For the Coming Season

By LEN G. SHAW

FOR 1916 the Republic Motor Truck Co., of Alma, Mich., is offering four models, these being of $\frac{3}{4}$ -ton, 1-ton, 2-ton and 3-ton capacity. Although the former two are in design practically the same, and the latter follow parallel courses, each is separate and distinct, the line between the several fields being sharply drawn. However, for the purpose of detailed description two models will suffice—the 3-ton and the $\frac{3}{4}$ -ton.

The former proves the most interesting, because it is an entirely new model, which the makers, not without reason, designate as "the new dreadnaught of truckdom." This characterization could be applied to the entire line, for the critical observer is impressed by the prevalence of oversized parts and the generous use of material at every point without making the trucks unduly cumbersome. Nickel steel is brought into use wherever it can be employed to advantage in benefiting the truck, in the matter of lighter weight and in strength. Thus we find that the front axles and spindles, rear axle spindles, transmission shafts and gears, drive shafts, differential gears, internal pinions, spring bolts, steering gear parts and various other members are made of this material.

Three-Ton Model

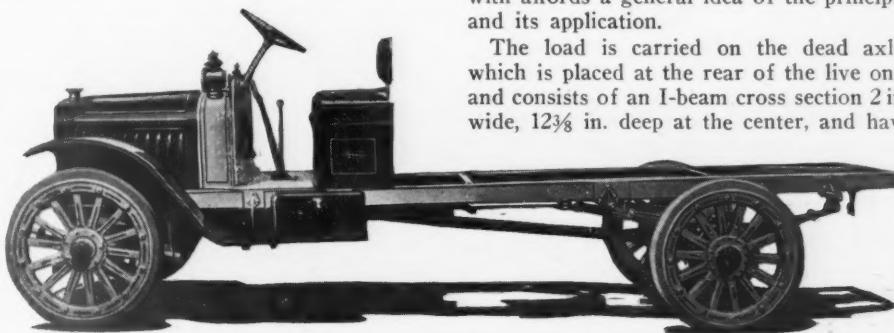
The power plant is of unit type, very compact, with accessibility a prominent feature. The engine is a Buda model "TU" long stroke, $4\frac{1}{4}$ -in. bore by $5\frac{1}{2}$ -in. stroke. It is of L-head design, cylinders cast in block.

Cooling has been worked out very satisfactorily through a gear driven pump, vertical round tube radiator and efficient fan.

The water jackets are of liberal proportions.

A multiple dry disc, sixteen face clutch is used, the friction surfaces being saw steel and raybestos.

Transmission is selective sliding gear, with four speeds forward and one reverse. Gear ratios are: Reverse, 42.9: 1; first, 39.6: 1; second, 22.7: 1; third, 14.5: 1;



Side View of Chassis of Republic Three-Ton Model

This model has steel wheels or wood artillery type, the former being in above illustration.* Wheelbase is 165 in.; tread 62 in.; weight 6360 lbs.; price, \$2350. With 185 in. wheelbase price is \$2400. Engine is a Buda, $4\frac{1}{4} \times 5\frac{1}{2}$ in., disc clutch and four-speed transmission completing unit power plant.

fourth, 11: 1. The differential reduction is $2\frac{3}{4}$: 1. Transmission gears and shafts are nickel steel, the gears having $\frac{7}{8}$ -in. face. Annular ball bearings are used throughout.

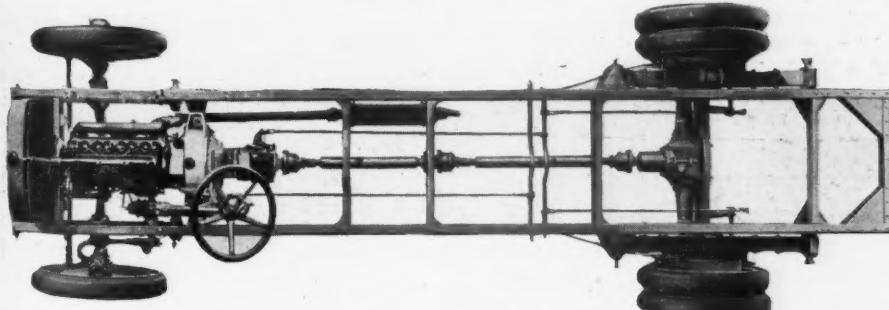
Three universal joints are used between the transmission and the rear axle, on the 3-ton model only and the second of these being anchored to a cross member of the frame in such a manner that it takes care of any whip that might result when on the road. The joints are absolutely grease and dust-proof, and the $2\frac{1}{2}$ -in. drive shaft is enclosed.

ing a $\frac{1}{2}$ -in. web. The spindles at the outer ends are $3\frac{1}{2}$ per cent. nickel steel, the spindle bearings being Hyatt and two-row ball. Revolving around these spindles are the drums which contain the internal gear mechanism, and to which the wheels are bolted. These gears are of special heat-treated steel, with wide faces, and held to the drum by fourteen bolts of generous size. It is claimed by the company that there has yet to develop a case of stripping in this quarter, however great the strain.

Axle Accessibility

Power is delivered through live shafts and pinions connecting with these internal gears, which are 4-pitch, $1\frac{1}{2}$ in. wide, and have 4: 1 reduction. The live shafts are of generous proportion, of nickel steel, and are carried on Hyatt bearings, the only variation from this type in this quarter being the ball thrust and two-row ball bearings at the head of the pinion gear shaft.

The live axle housing consists of several sections securely bolted together in such a way that if desired access can be had to a given part without disturbing the rest of the mechanism. The entire axle can easily be disassembled by removing the rear wheels and withdrawing the driving pinions through the housing at either side, they



Top Plan View of Republic Three-Ton Chassis

This shows clearly the heavy construction, throughout, of this three-ton chassis. The three universal joints in the drive shaft are shown; also the internal-gear drive rear axle

being kept in position by an easily extracted collar.

The live axle housing is anchored to the dead member at the center by four heavy bolts, and is also secured at the outer ends.

Two sets of heavy brakes are fitted to the rear wheel drums, the emergency double action being of internal expanding type, $19\frac{1}{4} \times 2\frac{1}{2}$ in. in dimensions. The service, also double acting, is external contracting, 20×3 in. They are faced with thermoid.

Springs, Front Axle

Spring suspension has been worked out with care, and here as elsewhere there is evident provision for maximum stress. It will be observed that the clips which hold the dead axle in position midway of the rear springs are rounding. The clips are of nickel steel and fit over a semicircular steel casting that rests on top of the spring, with a collar at either end, so that there is no possibility of it slipping out. The clips are of exceptional proportions, and pass through heavy anchor plates above and below the axle.

The springs are alloy steel heat treated, with single rear shackles on all four springs. The rear springs are 52 in. long, 4 in. wide, and have thirteen leaves. Front springs are 44 in. long, 3 in. wide, and have eight leaves.

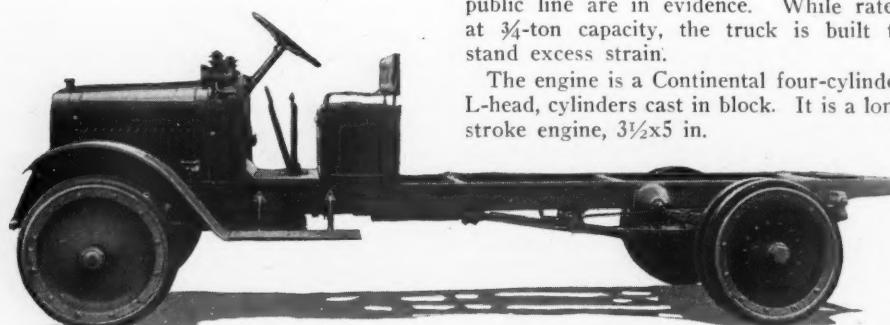
The front axle is an I-beam cross section $3\frac{3}{8} \times 2\frac{1}{4}$ in. wide, and with $1\frac{1}{4}$ in. web. Bower bearings Nos. 311 and 312 are used, the inside spindle dimensions for bearings being $2\frac{3}{8}$ in., the outside spindle diameter for bearings being $2\frac{5}{32}$ in.

Frame

The frame is of very sturdy design, of pressed channel steel of $\frac{1}{4}$ in. thickness. There are six substantial cross members, gusseted in position wherever deemed advisable. The frame is 7 in. deep at the center, and $2\frac{1}{2}$ in. wide. Its extreme width is 37 in., it is 240 in. long, and of this there is 146 in. clear back of the driver's seat.

Wood or steel wheels are furnished as desired, they being 37×5 in., with dual rear tires. Wood wheels are of artillery type, with fourteen square spokes, those in the front being $2\frac{1}{2}$ in., and the rear $3\frac{1}{2}$ in. Firestone solid tires are standard equipment.

Wheel base is 165 in., tread 62 in., and the chassis, with driver's seat, front fenders and running boards weighs 6360 lbs. The price of this model is \$2350, a 185-in. chassis being furnished for \$2400.



Republic One-Ton Truck

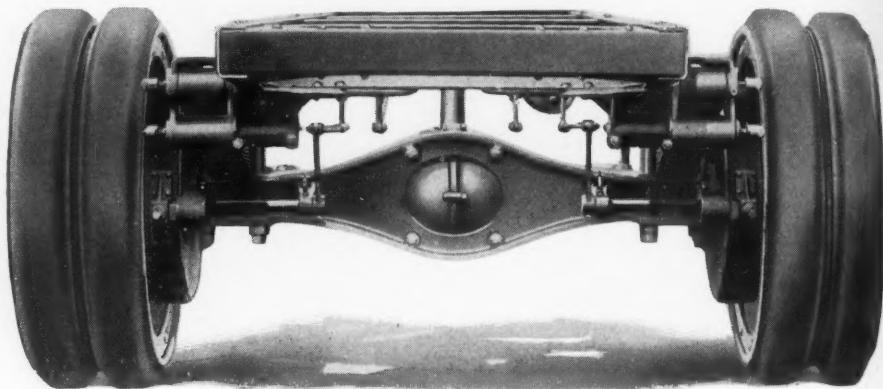
Engine in this model is $3\frac{3}{4} \times 5$ in.; wheelbase 144 in.; weight, 3000 lbs.; price, \$1275 without body. Electrical equipment is extra. This model differs from the three-quarter ton model chiefly in the increase in size of parts necessary for the greater capacity.

The CCJ brings greatest returns to advertisers because of largest circulation among quantity buyers

Two-Ton Model

The 2-ton model follows closely the lines of the 3-ton truck, but it has a 144-in. wheelbase, and there is a corresponding reduction all around. Ignition, as with all the other models, is by high tension magneto, with fixed spark and an automatic governor, controlled by the velocity of the

The clutch is a 10-face dry disc. Transmission is selective sliding gear, with three speeds forward and reverse. Gears are heat treated case hardened nickel alloy steel, with $\frac{7}{8}$ in. face. The center control lever operates in a ball and socket joint. Fafnir bearings are used throughout the transmission.



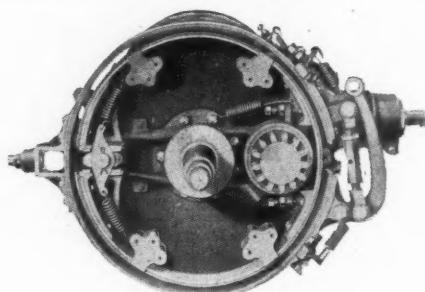
Republic Rear Axle Construction—Three-Ton Chassis

This shows the view of rear of Republic three-ton truck rear axle. It is internal-gear drive type, load being carried on heavy dead member shown

gas, and so adjusted to any desired speed. The price of the 2-ton model is \$1575.

Three-Quarter Ton Model

The Republic Motor Truck Company won not a little of its fame with the $\frac{3}{4}$ -ton model; which is being continued with nu-



View of Rear Axle End With Wheel Removed

This clearly shows the brake mechanism and internal-gear pinion. Brakes are $19\frac{1}{4} \times 2\frac{1}{2}$ in. and 20×3 in. faced with Thermoid.

merous refinements, particularly in the matter of drive, the internal gear being used this season. The lines are identical with those of the heavier models, and the cowl dash and rivetless fenders that have become a distinguishing mark of the Republic line are in evidence. While rated at $\frac{3}{4}$ -ton capacity, the truck is built to stand excess strain.

The engine is a Continental four-cylinder L-head, cylinders cast in block. It is a long stroke engine, $3\frac{1}{2} \times 5$ in.

Drive, Frame

Drive is through Hartford joints and $1\frac{3}{4}$ in. open tubular shaft to the internal gear rear axle, the gear ratio of which is $6\frac{1}{2} : 1$. The entire load is carried on a drop-forged I-beam dead axle, with generous spindle bearings, the inside being $1\frac{3}{4}$ in. bore by $3\frac{15}{16}$ in. outside diameter. The outside spindle bearing has $1\frac{3}{16}$ in. bore by $2\frac{15}{16}$ in. outside diameter. Bower bearings are used.

Services and emergency brakes are located on the rear wheels, they being respectively $15 \times 2\frac{1}{2}$ in. and $14 \times 2\frac{1}{2}$ in. face.

Front springs are semi-elliptic, with seven leaves, 38 in. long and $2\frac{1}{4}$ in. wide. The rear also are semi-elliptic, with 11 leaves, 52 in. long and $2\frac{1}{4}$ in. wide.

The frame is $3\frac{1}{16}$ in. pressed channel section steel, 34 in. wide except between front wheels, where it is inset to 31 in; 182 in. long, and $4\frac{1}{2}$ in. deep at center. The distance back of the driver's seat is 98 in.

Wheels are artillery type, with fourteen $1\frac{3}{4}$ in. square spokes front and rear, fitted with 35×3 in. front and $35 \times 3\frac{1}{2}$ in. rear solid tires, or $34 \times 4\frac{1}{2}$ in. and 35×5 in. pneumatics. Wheelbase is 124 in., tread 56 in. The weight of the chassis is 2800 lbs.

The price of the $\frac{3}{4}$ -ton model is \$995, which includes open express body. Westinghouse igniting, lighting, starting and generating system is furnished for \$125 additional.

One-Ton Model

The 1-ton Republic differs from the lighter model chiefly in the increase necessary to care for the added capacity. The engine, for example, is $3\frac{3}{4} \times 5$ in., the frame is 202 in. long, and the distance back of the driver's seat is 118 in. The wheelbase is 144 in., and the weight of the chassis is 3000 lbs., it being furnished for \$1275 without body. Electrical equipment also is extra, as in the case of the lighter model.

The Republic Motor Truck Company has increased its factory space 150 per cent. during the last year, and there will be a corresponding increase in the output of these four models.

The Atterbury Line for 1916

By GEORGE W. GRUPP

ATHE Atterbury Motor Car Co., of Buffalo, N. Y., announces that its 1916 models will be 1- 1½-, 2- and 3½-ton worm driven trucks. These new models are distinctly different in design from any previous Atterbury models, and it is the object of the company to specialize on these models. A large number of new features have been added which makes them distinctly individual. In a nutshell, these models are stronger, simpler and better.

Engines

All of the engines have four vertical cylinders, "L"-heads and cast in block except the 3½-ton, which is cast in pairs. The bores and strokes are: 1- and 1½-ton, 3¾x5½ in.; 2-ton, 4⅛x5¼ in.; 3½-ton, 4½x5½ in.

The crankshafts are of the three bearing type made of special crankshaft steel, drop forged, heat treated and have a tensile strength of 90,000 lbs. per sq. in. All bearings are made of bronze with babbitt linings. A universal starting crank is used, which allows an easy engagement no matter at what angle the wheels are tilted.

The camshaft is on the left side and is single drop forged, operating in long nickel babbitt bearings which are lubricated by a splash of oil from the crank chamber.

Inlet and exhaust valves are of a generous size, interchangeable. They are made of nickel steel to prevent pitting and corrosion. The valve stem locking device is a patented feature and it is simple, positive and readily detached. The removable metal plates which cover the valves not only keep them free from dirt, but also quiet the engine.

The water pumps are large and well proportioned. Centrifugal pumps are fitted to the engines so as to insure ample circulation at all speeds. They are of a double bearing type and are equipped with large stuffing boxes and drain cocks.

A combination forced feed and splash system of lubrication is used in each model. The equipment consists of a double vertical

plunger pump driven by eccentrics on the camshaft. But the most pronounced feature of the lubrication system is the transparent dash oil indicator. This is unique. A round hole has been cut in the dash so that the sunlight and light from the lamps on the street at night will shine on the indicator. Thus the oil in the indicator may be seen at all times. The oil capacity is four quarts on all models except the 3½-ton, which has a 7 quart capacity.

The governors used are of the Pierce heavy flyball type, using a special right angle drive which eliminates short curves in the drive shaft. Thus the action and life efficiency is increased. The governor operates on a butterfly valve in the gas inlet manifold. This makes it possible to control the speed of the engine by shutting off the supply of gasoline.

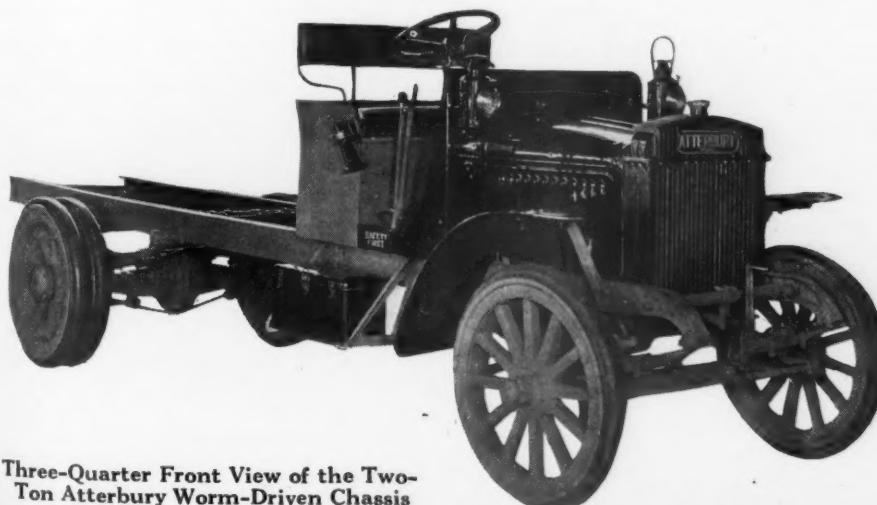
The Bosch single spark waterproof magneto system of ignition is used in all models except the 3½-ton, in which the Bosch duplex vibrating coil system is used.

Zenith non-adjustable carburetors are used. On the 1- and 1½-ton 1-in. carburetors are used, while on the remaining two 1¼-in. are used.



Front View of the Three and a Half Ton Worm-Drive Atterbury

Note the vertical tube gill fin radiator



Three-Quarter Front View of the Two-Ton Atterbury Worm-Driven Chassis

Transmission

All clutches are of the multiple disc type. They are enclosed and built in the front end of the transmission and bolted to a flange of the crankcase to the rear of the flywheel housing. A large inspection plate held in place by two screws makes it possible for quick inspection. Driving plates are lined with special friction material and the shaft plates are of steel which have been hardened and ground. As the clutch is not run in oil, it is not affected



View Showing Dash and Arrangements of Steering Gear

Showing control levers, gasoline filler, etc., on the three and a half ton Atterbury worm-drive chassis. All other models are the same.

by atmospheric conditions. A disc faced with special friction material mounted at the rear of the clutch coming in contact with a metal disc when the clutch is disengaged acts as a brake to the spinning of the propeller shaft, thus assisting in quiet gear shifting. The two smaller models have eleven discs each, while the others have thirteen.

The transmissions are of the selective sliding gear type with four speeds forward and one reverse. This additional speed has been added so that their trucks will become more able under conditions where the roads are rough and steep. They are mounted in unit with the engines, thus making it impossible to throw frame distortion strains on them; also they are more accessible, as they are located directly under the floor boards. All cases are made of aluminum. The gears are made of carbonized nickel steel, hardened and heat treated. The shafts are made of chrome-nickel steel, heat treated. All shafts are mounted on Timken roller bearings. Throughout special provision was made to prevent any oil from leaking from the transmission.

The power is delivered through large tubular shafts which are light and very rigid. At the end of each tube is a large grease packed joint—Spicers oil tight universal joints. The drive shaft is made of 35 point carbon steel. They are 1¾ in. in diameter on the 1- and 1½-ton; 1½ in. on

the 2-ton and 1 15/16 in. on the 3 1/2-ton. Timken roller bearings are used throughout.

Axles

The front axles on all of the models are straight I beams, drop forged. The axle steering rods are in front of the I-beam.

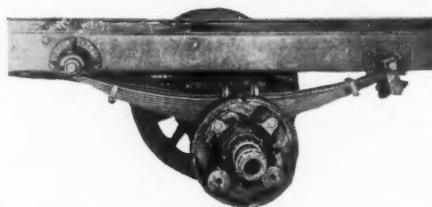
All rear axles are of the full floating type mounted on Timken bearings.

The axle tread on the 1- and 1 1/4-ton is 58 in. (rear and front); the 2-ton is 60 1/2 in. (front), 60 in. (rear), and the 3 1/2-ton is 66 3/4 in. (front), 66 in. (rear).

Springs, Brakes and Frames

The springs, both front and rear, on all models are of the semi-elliptic type, made of best oil tempered chrome-silicon manganese spring steel. With their spring drives they have been able to lower the cost of maintenance and increase the life of the driving mechanism. The diameter of all spring bolts is twice the customary

with a nut and then riveted. The size of the frame on the 1- and 1 1/2-ton is 5 3/4 x 2 3/4 x 1 1/4 in.; the 2-ton is 6 1/2 x 2 3/4 x 1 1/4 in., and the 3 1/2-ton is 7 x 3 1/4 x 1 1/4 in. The width on all models is 34 in., except the 3 1/2-ton, which is 37 1/2 in. The length of the frame back



Rear Spring, Duplex Brakes, and Rear Wheel Bearing as Used on the Atterbury Trucks

of the seat on the 1- and 1 1/2-ton is 109 3/8 in.; the 2-ton is 133 3/8 in., and the 3 1/2-ton is 145 3/8 in.

Radiators

Another feature is the seamless, helical tube Rome-Turney extra large sized radiators. They are 21 x 26 x 4 in. on all models except the 3 1/2-ton, which is 23 x 29 x 4 in. The radiators are mounted on two specially designed non-vibrating plate springs which are attached to the frame. The diameter of all fans is 18 in.

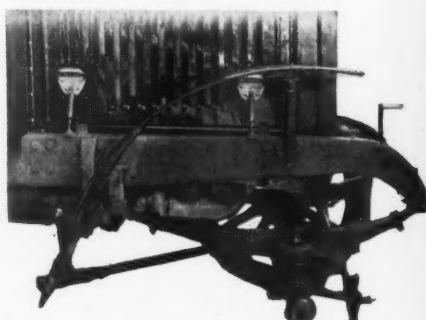
Artillery wood wheels are used throughout. The wheelbase on the 1- and 1 1/4-ton is 140 1/2 in.; the 2-ton is 153 1/2 in., and the 3 1/2-ton is 167 1/2 in.

The steering gear is now located on the right side and is of the worm and sector type. The gasoline tanks have been increased to a capacity of 30 gals. The tank can easily be filled without lifting seat, as will be seen from the accompanying illustration.

Another new feature with these models is the extremely high dash which is intended to protect the driver.

The 1 1/2-ton model is precisely the same as the 1-ton, except that it uses a rear axle, springs and spokes in the rear wheels as are used in the 2-ton model.

The prices of the chassis equipped with cab and Klaxon horn, tools, etc., are as fol-

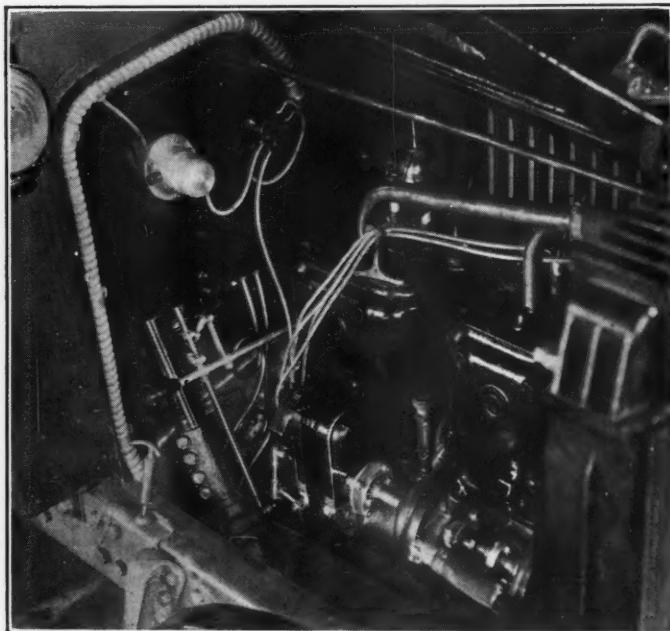


Front End of Atterbury

Showing front axle, front spring, drag link, knuckle, arm and Timken bearing as used in the Atterbury three and a half ton worm drive.

lows: One-ton, \$1775; 1 1/2-ton, \$1875; 2-ton, \$2375, and the 3 1/2-ton \$3175. All f.o.b. Buffalo.

The Edison Storage Battery Co., Orange, N. J., has just issued a new bulletin on the use of the Edison Nickel-Iron-Alkaline Battery in commercial vehicle service. After enumerating some points of superiority of the electric wagon in delivery service and the effect that the Edison Battery has had in increasing its simplicity, durability and reliability and in reducing the cost of maintenance and repairs and the labor attending them, the book briefly describes the construction of the Edison cell and gives examples of some of its remarkable characteristics such as long life, great mileage, ruggedness, service efficiency, cleanliness and ability to withstand extremes of temperature.

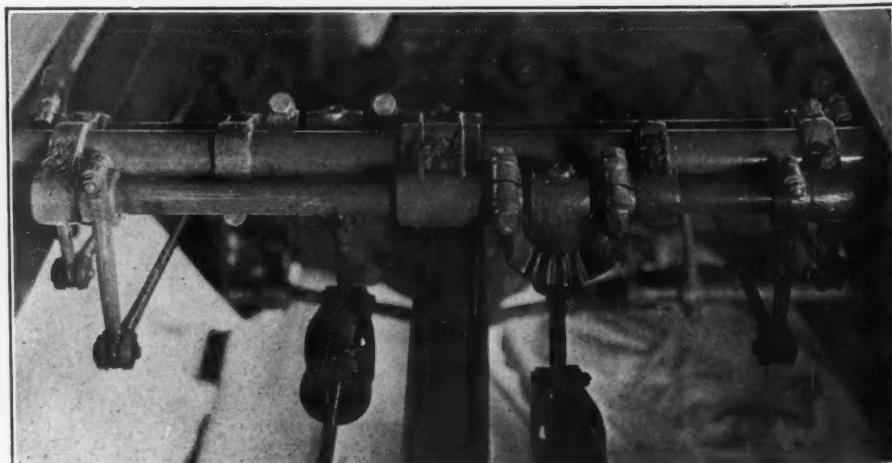


Right Side of the Atterbury Engine
Showing water pump and magneto. Cylinders are cast in pairs

size. They are hollow and filled with wicking which allows a gradual flow of oil to the bushings through the oil holes in the bolts. The spring eyes are bushed with phosphorous bronze. They also use clamp and lock bolts.

Each truck is provided with two sets of brakes, service and emergency, both of which operate on the wheels. Both brakes are 16 x 3 1/4 in. except the 3 1/2-ton model, where the dimensions are 18 x 3 1/4 in. The featuring thing about these brakes is their straight line pull and the newly added hand adjusters.

No bolt or rivet holes can be found in either the top or bottom flanges of the frame. This prevents localizing of any weakness in frame construction. Throughout the frames have been made very flexible, having no cross members. Instead of cross members they have generous sized tubes which extend from one side member to the other. Through these tubes a bolt passes which is affixed to the side members



Atterbury Brake Equalizers
Note hand adjustment on brake rod. This construction is used on all the Atterbury models

Resiliency with Toughness

THE combination of extreme resiliency with long-wearing toughness in truck tire compounds is distinctively a Firestone success. It accounts for the most-miles-per-dollar service of Firestone tires and, what is equally important, the protection of motors, axles and frames by the elimination of shock and vibration. The fact that more Firestone truck tires are in use than any other make evidences the general knowledge and experience of truck owners as to Firestone quality. The Pressed-On tire here shown is one of the many Firestone types, which include a tire for every need.

It is the work of a few minutes at your local Firestone Service Station to press on to any S. A. E. standard wheel one of these strong, durable tires. They are applied direct to felloe band under heavy hydraulic pressure. "Creeping" is not possible. Call a Firestone traffic expert from your local station for details—and low prices.

Firestone Tire and Rubber Co.

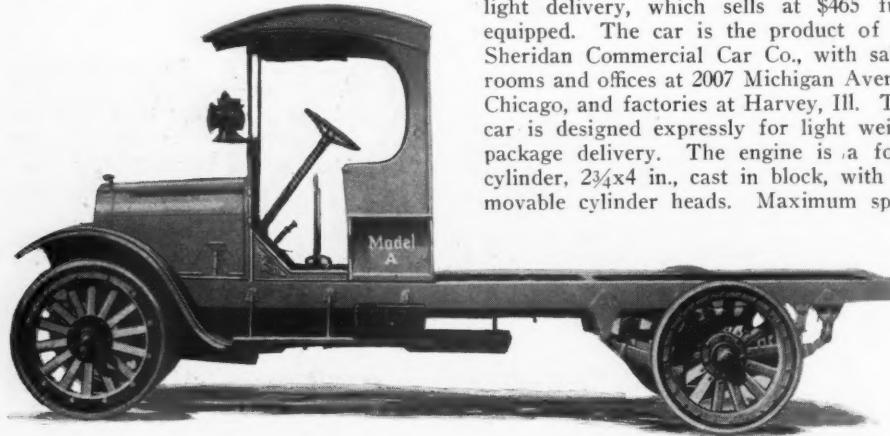
"America's Largest Exclusive Tire and Rim Makers"

Home Office and Factory: Akron, Ohio

Branches and Dealers Everywhere

NEW CHASE TRUCK—ONE-TON WORM-DRIVE. CHASSIS PRICE, \$1650

The Chase Motor Truck Co., of Syracuse, N. Y., has recently placed on the market the new Model A truck, which has capacity of 1 ton, worm gear drive, the chassis listing at \$1650. It has loading space of 8½ ft. back of driver's seat, tires



Chase Model A, One-Ton Chassis; Price, \$1650

This is the new Model A, One-Ton Worm-Drive Truck. Wheelbase is 140 in.; tread, front and rear, 56 in. Starting and lighting and rear fender equipment is extra

are single Firestone solids, front being 36x3½ in., rear 36x5 in.

Unit Power Plant

The engine of the unit power plant has four cylinders, "L"-head type, bore 3½ in., stroke 5½ in. The clutch is dry plate type, transmission being a Brown-Lipe, selective type, three speeds forward and one reverse. Drive to rear axle is by shaft rear axle drive David-Brown type worm, axle being a Sheldon. The governor is automatic, enclosed and sealed. The engine is water cooled, ignition is by Bosch high tension magneto, and carburetor is a Holley.

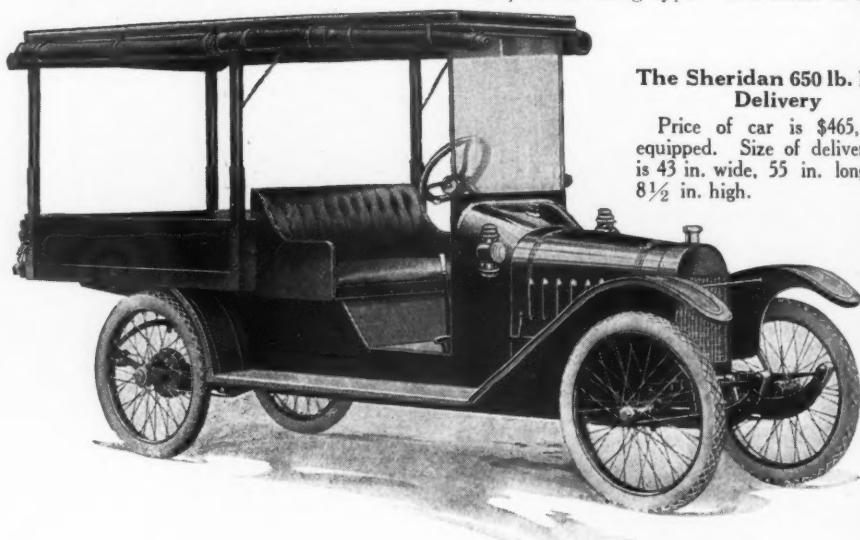
Other Details

The front axle is "I"-beam type. The steering gear is worm and nut-type. Control is by hand throttle and foot accelerator. Springs are semi-elliptic all around. Frame is of pressed steel, heavy. Both sets of brakes operate on rear wheel drums.

The wheelbase is 140 in., standard tread front and rear. Gasoline capacity is 18 gal., oil 1¾ gal. Where cab and seats are not wanted a deduction of \$40 is made from the list price.

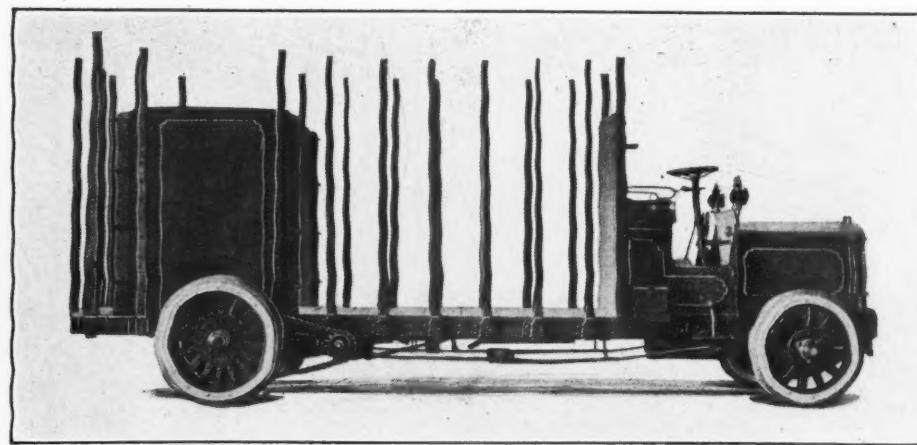
SHERIDAN LIGHT DELIVERY

One of the latest entrants into the light delivery car field is the Sheridan 650-lb. light delivery, which sells at \$465 fully equipped. The car is the product of the Sheridan Commercial Car Co., with sales-rooms and offices at 2007 Michigan Avenue, Chicago, and factories at Harvey, Ill. This car is designed expressly for light weight package delivery. The engine is a four-cylinder, 2½x4 in., cast in block, with removable cylinder heads. Maximum speed



The Sheridan 650 lb. Light Delivery

Price of car is \$465, fully equipped. Size of delivery box is 43 in. wide, 55 in. long and 8½ in. high.



The Doane Low-Bed, Short-Haul Motor Truck

This truck is designed especially to facilitate the economical loading and moving of heavy commodities from docks and warehouses. The car shown is of six tons capacity. The body is 24 in. high from the ground. The floor is 64 in. wide and 14 ft. in length.

of car, 30 m.p.h. Transmission is of two speeds, selective type. Axle is of full floating type. Wheelbase is 104 in. An option is given of wood or wire wheels. Other specifications are: Carter carburetor, Bosch magneto, pressed steel frame, cone clutch, pinion and sector steering gear. The equipment includes two gas lamps and rear oil lamp, windshield, horn, tools, Prest-O-Lite tank, top and side curtains.

DOANE LOW-PLATFORM HEAVY HAULING TRUCK

The distinctive feature of this truck is its low bed, or loading platform, which makes it especially applicable to use around warehouses, docks and freight stations. The rear spring construction consists of a combination elliptic leaf spring and spiral spring arrangement. When the elliptics deflect 1½ in. they get the support of the spirals, there being four of these. The spirals are particularly efficient in cases of overloading, or when the load was shifted to one side. The rear axle clears the ground by 8½ in.

Brief specifications of the chassis are as follows: Engine, four cylinders, 4½-in. bore, 6¾-in. stroke, three speed transmission, multiple disc clutch, Bosch high tension ignition, 24-gal. gas tank. Final drive is through chains and bevel gear differential, full floating type. The latter is a spe-

cial Doane construction of extra heavy design. The drive shafts are 1½ in. in round section, and splined on ends. Timken bearings are used throughout. Wheelbase is 178 in., tread 68 in. front, 96 in. rear. Tires 36x6 in. single front, 38x6 in. dual rear, demountable.

This truck is built by the Doane Motor Truck Co., 425 Fourth Street, San Francisco, Cal. The machine illustrated is the 6-ton size and lists at \$4500, f.o.b. San Francisco. Price includes body and painting. Two other sizes are made to order, viz.: 2½ tons, \$3000; 3½ tons, \$3750.

Joseph McNamara, Hartford, Conn., has a motor truck butcher shop, which he takes to his rural and suburban customers, who find it inconvenient to come to his shop. He has had a special body designed for a large four-cylinder chassis, including a shelved refrigerator for carrying meats. These shelves are neatly lined with enameled metal and present a very attractive appearance.

The Restraining Hand

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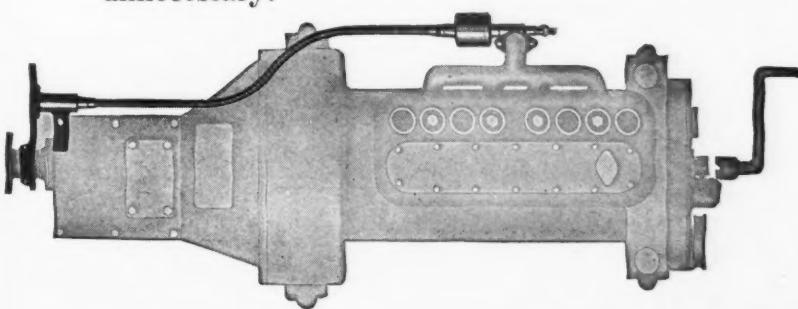


PIERCE

SPEED-CONTROLLING DEVICE

Thousands of trucks and delivery cars, operating in all parts of the country, are equipped with one of the three Pierce Speed-Controlling Devices as being the best possible means of preventing their being driven at excessive speed.

The merit of PIERCE products is so well known, the economies they effect have been so conclusively shown, the safety they produce is so appreciated by all wide-awake truck owners that extended argument or explanation is unnecessary.



The important question is this: Are they on your trucks or do you let your speed fiends drive your trucks to rack and ruin?

If the latter, it's time you became a PIERCE convert.

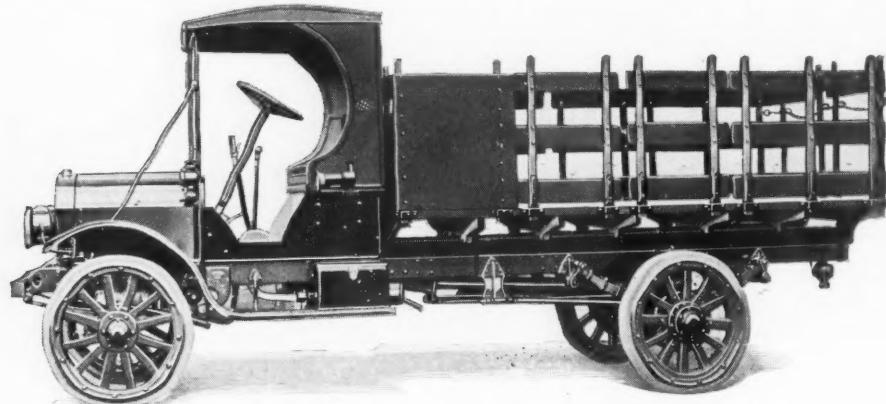
PIERCE GOVERNOR COMPANY
Anderson, Indiana, U. S. A.

Originators of Speed-Controlling Devices for Gasoline Cars
THE WORLD'S LARGEST GOVERNOR BUILDERS

Several Novel Features Characterize Menominee Trucks



THREE models are offered by the D. F. Poyer Co., of Menominee, Mich., one at \$1125, cataloged as Model E, of 1500-lb. capacity, with spiral bevel drive; one at \$1575, which is Model F W, worm driven, 2000-lb. capacity; and the largest, a 4000-lb. unit, Model D, worm driven, at \$2240. All three models use Continental engines. Stromberg carburetors, Bosch magnetos, and employ the combination splash and force feed system of lubrication; Brown-Lipe transmission and clutch, Gemmer steering gear. Wheelbase on the 1500-lb. truck is 124 in.;



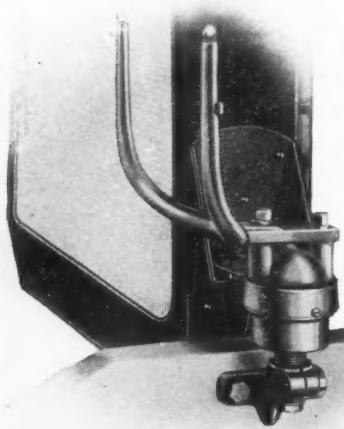
Menominee Worm-Driven Two-Ton Truck, Model D

Price of chassis, fully equipped and finished in priming coat, \$2240. Fitted with stake body 66 x 132 in. or express body without top, screen or side curtains, 52 x 128 in., price of either body, \$150. Wood cab over driver's seat, including curtains, \$50; folding glass front, \$25.

130 in. on the F W, with option of 144 in., and 144 in. on the Model D.

Special Features

One of the features of the Menominee line is a new type of radiator support which at the same time acts as a shock absorber. It is a pneumatic device which together



Pneumatic Radiator Support, Shock Absorber and Lamp Bracket

The radiator and head-lamp bracket are mounted on the Pneumatic Vibration and Shock Absorber. A rubber ball provides a perfect cushion and acts as a pivot, while it is perfectly encased and protected against dirt and grit.

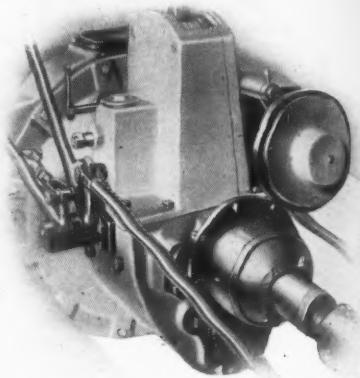
The CCJ is the only truck publication a member of the Audit Bureau of Circulations. There's a reason!

with the tie-rod constitutes a three-point suspension, and guards the radiator against road shocks, vibration and all warping stresses. The device consists of a heavy rubber ball, which is incased and protected against dirt and grit. The head lamps are also carried on this pneumatic shock absorber.

Next in importance may be mentioned the auxiliary springs which are of Menominee design and make. They are coil springs fitted with special brackets and plunger guides. These springs come to the assistance of the main spring at a time when the latter is about to be overtaxed. This

the springs of all driving stresses. A very simple adjustment at the frame bracket makes it possible to permanently maintain the rear axle in perfect alignment.

Attention is called to the universal type brake eveners, which insure a perfect braking surface regardless of the action of the



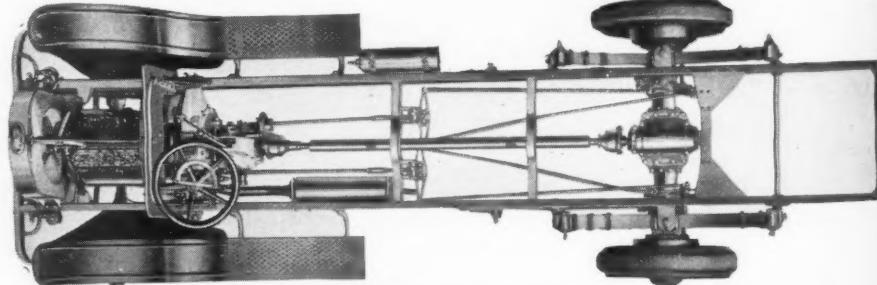
Menominee Automatic Governor

This is controlled by the velocity of the propeller shaft rather than that of the engine

truck under various road conditions and spring actions.

Engine Capacities

On the Model E 1500-lb. truck a four-cylinder, $3\frac{3}{4}$ in. bore by 5 in. stroke, 25 h.p. power plant is used. The 2000-lb. truck power plant has $4\frac{1}{4}$ in. bore, $5\frac{1}{4}$ in. stroke, rated at 30 h.p., while the 4000-lb. truck



Top Plan View of Menominee Model D Two-Ton Truck

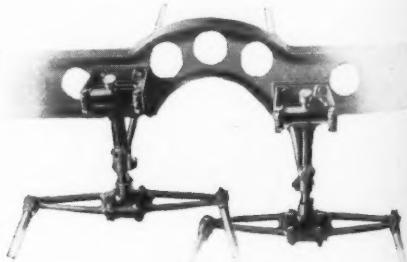
The construction of Model F W and Model D are exactly the same, the only difference being in size and capacity

auxiliary spring, besides displacing the ordinary rubber bumper, does not allow the load to come in dead contact with the rear axle.

The Menominee automatic governor is controlled by the velocity of the propeller shaft and consequently does not depend upon the power of the engine. The governor is driven by means of a friction wheel coming in contact with the universal joint flange, acting on intake manifold through push rods.

The distance rods are of the tubular type of proper length and set at correct angle to maintain uniform distance between rear axle and transmission regardless of spring action. This practically eliminates all sliding action of the propeller shaft in the universal joint. The distance rod also relieves

embodies a $4\frac{1}{8} \times 5\frac{1}{4}$ in., 35 h.p. engine. In all models the engine is mounted under the hood. The small machine uses a thermo-



Universal Type Brake Eveners on Menominee

These are designed to eliminate the possibilities of rods or yokes binding, and insures free action at all times.

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Governor
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THE FEATURE OF THE SHOW

Each of the great automobile shows develops one feature exhibit that stands out above all others as the real money maker above all others.

At Chicago this year the great outstanding exhibit was the Stewart 1,000-pound truck.

With every part a truck part this model attracted the attention of thousands of dealers.

Not one dealer among them made an adverse criticism of its lines or design.

Every dealer agreed it would be the easiest selling motor truck on the market this year.

Territory is being taken daily.

Write today—your territory may still be open. You cannot afford not to know our proposition.

Stewart 1,000-pound truck prices

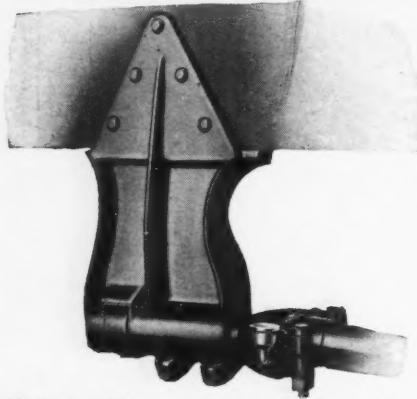
Chassis, \$695 Express Body, \$750 Panel Body, \$795

STEWART MOTOR CORPORATION
Buffalo, New York

siphon system, while the other two use gear driven centrifugal pump.

The brake eveners illustrated are used on the F W and D worm drive models, while on the Model E a different form is used which is so constructed that when the emergency brake is used it also brings the service brake into action. The rear axle on the Model E is a Timken floating with nickel steel axle shafts, the spindles being fitted with Bower roller bearings.

The maximum speed of the Model E is 25 m.p.h., of Model F W, 16 m.p.h. and of



Tubular Distance Rod on Menominee

It is provided with adjustment at the frame bracket, relieves the springs of all driving stresses and insures uniform distance between transmission and rear axle as well as perfect alignment of rear axle.

Model D, 14 m.p.h. All speeds are controlled by the automatic governor.

The tire equipment consists of solid rubber demountable or pressed on 34x3½ in. single, front and rear, on the Model E, 36x3½ in. front and 36x5 in. rear, single, on the Model F W, and 36x4 in. single, front and 36x6 in. single, or 36x4 in. dual, rear on Model D. Chassis equipment includes driver's seat, running boards, gas headlights, Prest-O-Lite tank, two dash lights, tools and fenders. The standard body color is red with yellow running gear, although any color desired can be had without extra charge when trucks are ordered with bodies.

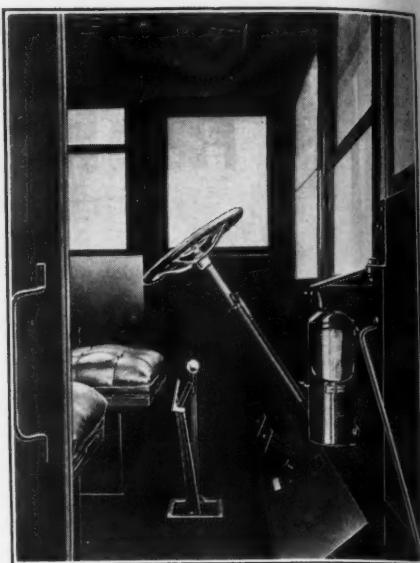


Auxiliary Spring on Menominee

This comes to the assistance of the main spring when it is about to be overtaxed, but does not permit load to come in dead contact with rear axle.

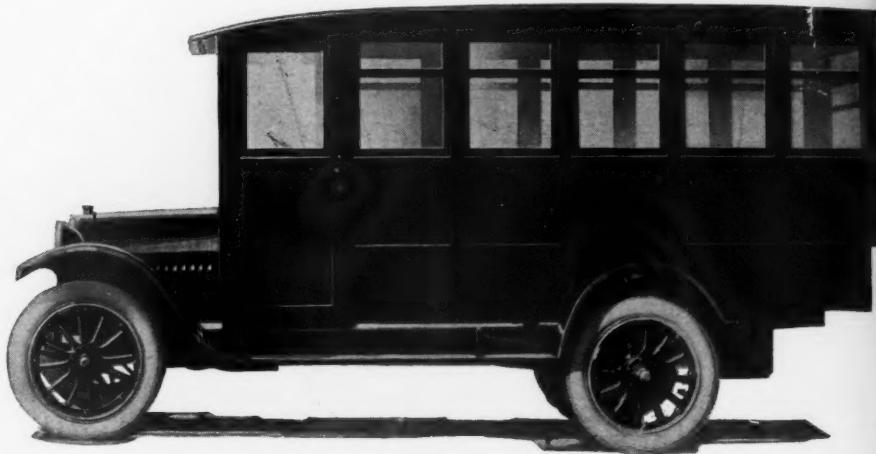
STUDEBAKER ANNOUNCES NEW ONE-TON LINE

The Studebaker Corp. of America, Detroit, Mich., has announced a new line of commercial cars for 1916, consisting of an open express complete, including folding khaki seat top at \$1200; stake body including stationary cab top, folding celluloid



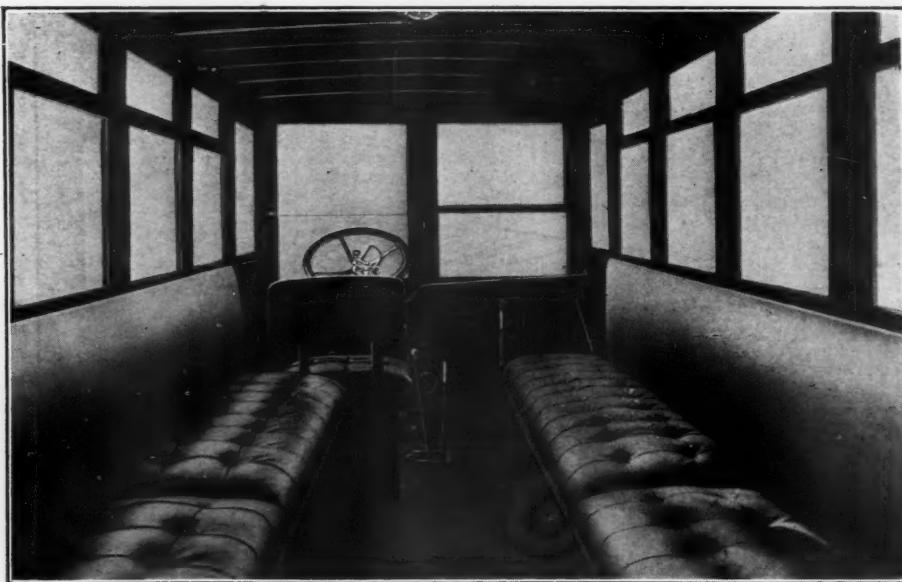
Interior View of Studebaker 'Bus

This view shows the interior of the driver's compartment, completely housed in by glass. Entrance is through the door in foreground of illustration, ingress and egress being between the front seats.



Studebaker Sixteen Passenger 'Bus, \$1400

This 'bus body is a new venture for Studebaker, the 'bus being fitted to the new 1916 Studebaker one-ton chassis



Interior View of Studebaker 'Bus

This view is from the rear inside and shows the location of driver's seat and the roomy seats on the sides for the passengers

curtain windshield at \$1250; a sixteen passenger 'bus with full equipment at \$1400. The chassis only, including dash, instrument board, etc., at \$1100.

The load capacity of the new line as above noted is 1-ton and the loading space has a width of 5 ft. 6 in. and length of 8 ft. Wheelbase is 125 in. and the frame is 186 in. long by 36 in. inside, the frame channel being 5x3x3/16. The engine has four cylinders cast in block, the bore being 3½ in. and stroke 5 in., using a three-bearing crankshaft.

The clutch is of cone type and transmission case is of aluminum, being bolted directly to the rear axle. Ignition is by means of storage battery and distribution, and an electric engine starter is provided.

The rear axle is of full floating type, the axle metal being steel casting, Timken roller bearings being used. Wheels are of wood, artillery type, fitted with 35x5-in. pneumatic tires front and rear, those on the front wheels being smooth tread, the rears being safety tread. Front springs are semi-elliptic as are also the rear springs.

